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The Political Geography of the Italo-Abyssinian War

By

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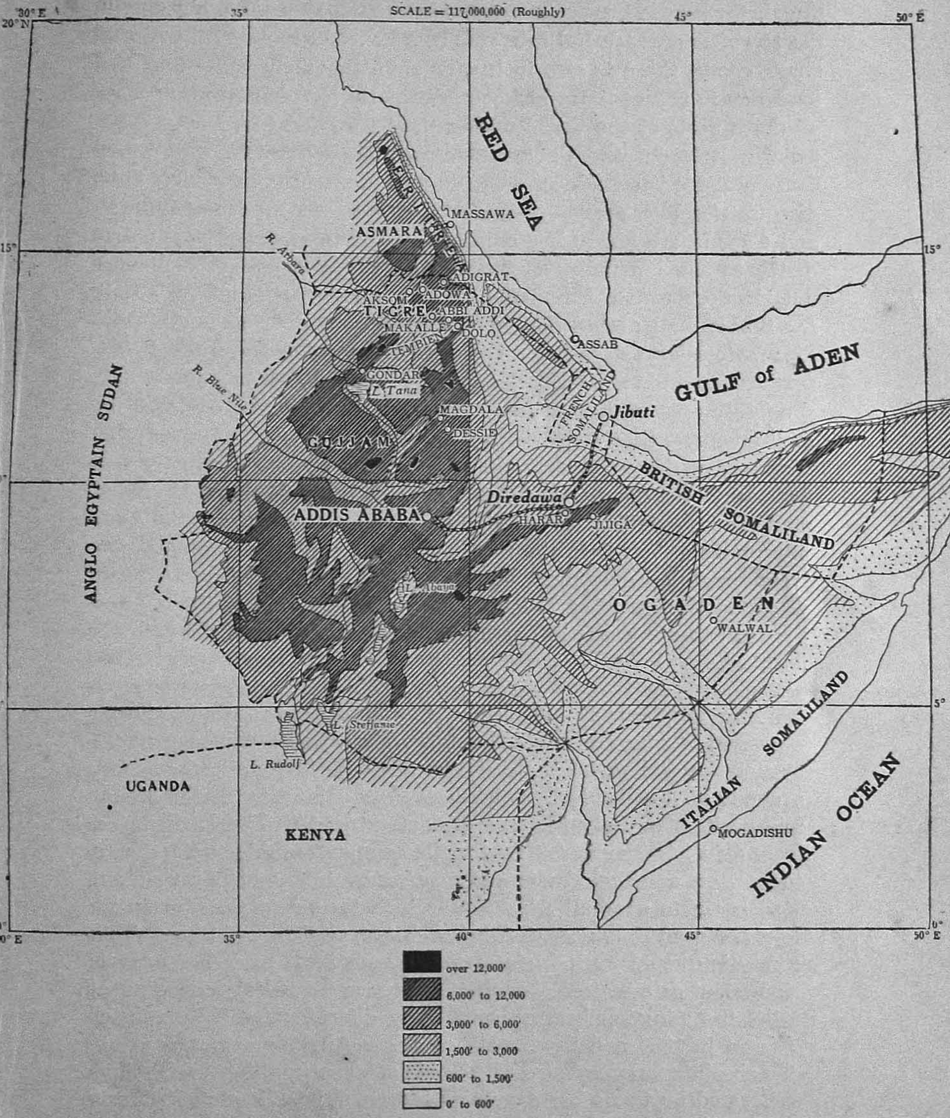
There has been universal condemnation of the Italo-Abyssinian War as a wanton war of aggression, contrary to the spirit and letter of several treaties and agreements, on a State that has through centuries managed to maintain an independent existence. Abyssinia is the only country in Africa that has escaped the clutches of the European powers during the great partition of Africa that took place in the latter half of the last century. Though war between Italy and Abyssinia was actually declared only in October 1935, the relations between the two countries were becoming strained from a long time. It was very clear to those who were closely watching recent political developments in Italy that the Dictator was looking forward with wistful eyes on East Africa and contemplating the possibilities of an Italian conquest of Abyssinia as a very satisfactory solution of all her problems.

For one thing, Italy has been desiring to avenge Adowa of 1896 and the Italian Dictator has been fired with an ambition to strike the imagination of the people by this great and spectacular event. "Success in the Abyssinian war will be a plume in the Duce's cap." But there were also deeper causes at work. Even as early as July 1935, Sgr. Mussolini declared that there were three vital needs of Italy to be satisfied, viz., fresh fields of colonisation for her growing population, economic self-sufficiency, and greater security for her East African Colonies.

Ever since the conclusion of the Treaty of Versailles, Italy has been nursing a great deal of dissatifaction against the allies for the disappointment caused to her by the Post-war arrangements

in regard to territorial distribution. When, in 1915 in accordance with the Treaty of London, Italy threw in her lot with the allies in the Great War, she did so on certain conditions viz., that she should be given the Trentino and South Tyrol or the *Italian Irredent* and also become mistress of the Adriatic by being given Trieste and Dalmatia together with all the Islands in the Asiatic coast besides retaining Valona and the Dadocanese. Further, she was also promised (by another treaty concluded between England, France and Italy in April 1917) a large slice of territory in Asia Minor including Smyrna. This particular agreement was only a declaration in more explicit terms of Clause IX of the Treaty of London that in the event of a partition of Asiatic Turkey, Italy also must have a legitimate share of the spoils. If this clause had operated, Italy would have been placed in possession of about 70,000 square miles of territory in Asia Minor. But for reasons which need not be examined here, these promises were not fulfilled, at any rate, in full. The allies even now could have done something to satisfy Italy by operating another clause of the Treaty of London which stated that in the event of any territorial readjustment of the captured German territories in Africa, Italy should obtain compensation, " particularly as regards the settlement in her favour of the questions relative to the Italian Colonies of Eritrea, Somaliland, and Libya and the neighbouring Colonies of France and Britain." But once again Italy was disappointed and even now she obtained nothing. It was perhaps the realisation of this sad fact by England that led to the Anglo-Italian convention by which England gave to Italy about 94,000 miles of territory on the North-Eastern borders of Kenya known as Jubaland. This acquisition was no doubt *something* for her, though by no means comparable to the French and English possessions in point of economic resources. It is the successive series of disillusionments and disappointments caused to Italy by the treatment accorded to her in the matter of allotment of Colonies at the Peace Conference that obliged her to leave the Conference-table with tears and return to Rome, and also drove her to the necessity of finding out ways and means herself to solve her internal economic problems, by embarking on this disastrous war in spite of the Covenant of the League and the Kellogg Pact. There is a sense of wounded national pride in the Italian, side by side with a growing anxiety for the material and moral welfare of the growing population of Italy. As it has been so well described by a leading writer " out of the total land area of 55 million square miles, 13¼ millions are included in the British Empire, 8¼ millions in Soviet Russia, 4⅛ in the French Empire, 3¾ in the United States and 4¼ in China, thus comprising a total land area of 34 million square miles

ABYSSINIA



SCALE = 117,000,000 (Roughly)
30° E
35°
40°
45°
50° E
20° N
15°
10°
5°
0°
RED SEA
MASSAWA
ASMARA
ERITREA
R. Atbara
ADIGRAT
ADOWA
AKSOM
TIGRE
ABBI ADDI
MAKALLE
DOLO
TEMBIEN
ASSAB
GULF of ADEN
GONDAR
L. Tana
R. Blue Nile
MAGDALA
DESSIE
FRENCH SOMALILAND
Jibuti
GOJJAM
ANGLO EGYPTAIN SUDAN
ADDIS ABABA
Diredawa
HARAR
JIJIGA
BRITISH SOMALILAND
L. Abaya
OGADEN
WALWAL
L. Steffanie
L. Rudolf
UGANDA
KENYA
ITALIAN SOMALILAND
MOGADISHU
INDIAN OCEAN
over 12,000'
6,000' to 12,000
3,000' to 6,000'
1,500' to 3,000
600' to 1,500'
0' to 600'

or just over three-fourths of the total. The Colonies of Belgium, Holland, and Portugal occupy another 2½ million square miles, thus bringing the total to 2|3 of the land surface of the globe." On the top of this which Italy regards as a hopeless mal-distribution of God's goods, there is also in her opinion the further fact that the tendency in recent times has been distinctly to confine the trade of all those parts of the world within the "National" frontiers. The tariff policies of the different countries as exemplified by the Ottawa and other trade-agreements and the new immigration laws of countries like France, the United States of America, Australia and Canada are all, in her opinion, evidences of the growing tendency to adopt a policy of "closed door" in regard to countries outside their own circles. Italy points out that it is all very well for States well provided with Colonial possessions and plenty of raw materials to state "that the age of expansion is over and that further attempts at Colonial expansion must be done only within the framework of the League"; but such disinterested advice from well-favoured States does not in any way solve the problems of Italy nor of those similarly placed like Italy such as Germany and Japan. Great Britain possesses the most valuable share of Africa and her imperialism has specially triumphed in Africa. Italy too must have a "place in the Sun." These are no doubt undeniable facts which however must be attempted to be faced by the world powers. Unilateral or bi-lateral action on the side of England or France will not result in any material improvement of the existing position.

For purposes of our study, the immediate question to be answered is why Abyssinia should be chosen as the sphere of extension for Italian influence. How far will Abyssinia, if opened, prove to be a valuable Colonial asset to Italy ? What is the economic position of Italy in the world at present ? The Italian case from a juristic point of view for the conquest of Abyssinia, seems to rest on an Anglo-Italian agreement of 1891 which recognised Italian rights over all Abyssinia, which then comprised only the four northern Provinces of Amhara, Tigre, Gojjam and Shoa. This treaty is quoted by Italy frequently in justification of her aggression. But as a matter of fact, whatever position Italy occupied in 1891, the situation became completely altered after the battle of Adowa in 1896 and the Treaty of Addis Ababa which recognised the absolute independence of Abyssinia. That position was further reiterated by two other agreements entered into later in 1906 and 1925. The former was a tripartite agreement between Great Britain, France and Italy by which they agreed to respect the

territorial integrity of Abyssinia with due regard to their mutual interests in the country. The latter more specifically defined the respective spheres of influence of Great Britain and Italy especially in regard to the exclusive right of England to deal with the waters of Lake Tana and the right of Italy to construct roads and railways in the hinterland of her colonies. It has also to be remembered that an Italo-Abyssinian agreement of 1928 provided for arbitration in all disputes between the two countries and the grant of a free zone to Abyssinia near the port of Assab in Eritrea. Thus the protocol of 1891 has been completely superseded and it cannot be cited by Italy any longer in justification of her aggression.

Let us look at the real position of Italy at the present day. The population of Italy according to official estimates for 1st January, 1935, is about 43 millions, which represents an increase of about 30 per cent. since the beginning of the present century. The rate of increase in population works out at about a million on the average every 2½ years. So long as the European States and the United States of America adopted an open-door policy, the pressure at home in Italy was relieved by emigrations of Italians to other countries. In fact about 650,000 Italians on the average left Italy for foreign countries during the years 1900-1914. But the new "closed system" adopted by the United States and the French Empire and the white Australian policy and the new immigration laws of other countries imposing restrictions on immigration, have all combined to prevent the "exodus" and close the outlet. Further, most of the Italians who had migrated abroad were obliged to return to their native land on account of the rigorous application of this new policy. This has caused to swell the already growing population at Home and constitutes a serious menace to social peace. Financially also the return of the emigrants was a loss to Italy for no longer could she count on remittances to the Home country from Italian residents abroad. This loss is by no means negligible as the remittances amounted to about 2,000 million lire every year on the average. It might however be pointed out that the surplus population can be absorbed by her own colonies in Eritrea and Somaliland, but in spite of the extreme adaptability of the Italian as a coloniser, it must be said that the climatic conditions and the economic resources of these colonies do not offer sufficient inducements for the coloniser. Eritrea has an area of 46,000 square miles with only a population of 6¼ lakhs. The whole land is volcanic and falls into two distant regions—the uplands in the North forming part of the Abyssinian plateau with an average height ranging from about 7,000 feet in the East to about 14,000

feet in the West and the lowlands in the South forming part of the Danakil country further West described very aptly by European travellers as the "Hell-hole of creation", on account of its torrid heat and prevalence of desert conditions. It is a land of boulders and rocks sometimes with a mean temperature of about 168 degrees in summer. The place is very unhealthy and therefore unfit for European settlers. There are only a few salt water springs and even these dry up completely during summer. The problem of transport is also equally difficult. So, it is only in the northern uplands on the Abyssinian Plateau or more specifically on the rich Tigre region containing the ancient places of Aksum, Adigrat, Adowa and Makalle that European colonisers can settle down.

In regard to Italian Somaliland, conditions are no doubt not so bad. The air is good near the coast. There are no disease-carrying insects. It is also very sparsely populated as it contains only about 1½ millions for an area of 195,000 square miles. But here also as in the case of Eritrea, the western part abuts on the Hand and the Ogaden deserts which are enormous stretches of thorn-bush and sand with oppressive heat and with absolutely no water. There are three rivers, the Nogal, the Juba and the Wabbe Shibbeli. The first two are very irregular and seldom find their way to the sea. For several miles around, there is only one place Wal-Wal, about 60 miles from the Italian frontier, where water is available. It is a clash at this spot between the Abyssinian followers of the local chief and a few Italians that was made the pretext for the outbreak of the War. The only river that may be of some use is the Wabbe Shebbeli called also the Nile of North-East Africa. It is a perennial river but 2/3rds of its course is in Abyssinian territory and at present of no use to Italian Somaliland. After flowing some distance and at about 12 miles from the Coast, it is faced with big sand dunes and unable to pierce through them, takes a southerly turn and disappears in the sands of Jubaland. For this river to be of any use to Italy, its upper reaches should be controlled and dammed. It is said that the control of these upper reaches is so important for Italy that a European member of the Frontier Commission of 1924 went even so far as to suggest that the *casus belli* of the war was this river. Somaliland is, therefore, as at present situated, equally unfit for colonisation, though, with the construction of dams on the upper reaches of the Webbe Shibbeli, the place can be improved and 5 to 6 million Italians can be easily settled.

It is not the question of over-population alone that causes grave concern to Italy. There is also the question of raw materials and foodstuffs. Italy is now more an importing country than an export-

ing country. She has to import all her coal, iron, oil, meat, cotton, and tobacco from other countries. Foodstuffs are a much smaller class of Italian imports, since by the Fascist ideal of making Italy absolutely self-sufficing in the matter of foodstuffs, marshes have all been drained and larger areas have been brought under cultivation of wheat. It is not so much difficulty in getting foodstuffs and raw materials, that is a great handicap to Italy. The world is having probably far too much of them. The question, on the other hand, is how Italy is to pay for these imports. She can do so only by goods and services ; but the intense economic nationalism prevailing in the world at present is a serious restriction on the outlet. Protective tariffs in the Colonies and the Dominions stand in the way of Italy meeting her obligations in the ways suggested above.

From the Italian point of view, therefore, colonial expansion alone appeared to be the solution for her difficulties.

Abyssinia to her offered a possible field for colonisation and economic exploitation. She is a vast country with an area of 350,000 square miles and a population of about 5½ millions. It is comparatively undeveloped and there are plenty of possibilities of economic development. It is only since the accession of the present Emperor Haile Selassia I in 1930 that she is attempting to emerge out of the throes of feudalism. Till the middle of the 19th century, the Abyssinian Empire consisted only of the four northern provinces of Tigre, Amhara Gojjam and part of Shoa ruled by independent chiefs owning only very nominal allegiance to an Emperor (Negus). Shoa, on account of her geographical position and greater compactness, was destined to exercise a predominating influence and therefore her kings have been taking a leading part in the unification of the country. Just as the Dukes of Paris triumphed over the other feudal lords in France and ultimately unified the country. Theodore II, Menelik II and Ras Tafari the present Emperor all hail from that place. Gollan, Ogaden, Harrar and the Danakil territories are all only recent acquisitions ; Danakil was ceded by Britain to Abyssinia only in 1897. The Abyssinians proper numbering less than 3 millions reside only in the northern provinces and are of Hamitic origin and Christians by religion. Those in the southern provinces are non-Amharic professing different religions. some of the Gallas in the south-west, for example, are Christians, while others are either Mahomedans or pagans. The Somalis in the Ogaden region and the Danakils in the north-east are all turbulent Mahomedans. From the point of view of physical configuration of the land also, there is diversity. The whole land is a highly mountainous region and a huge plateau, rising from a height of

about 7000 feet in the eastern regions to about 15,000 feet in the west. Some of the highest peaks are in the region of Lake Tana in the north-west. In between the original northern provinces and the more recently acquired southern provinces lies a great rift valley, the very rich and fertile valley of the River Hawash. It is here that Addis Ababa is situated and it is along this valley that the only Railway line in Abyssinia, viz., the Djibouti—Addis Ababa line runs. These geographical factors largely account for the fact that the outlying parts were only very loosely held and continue to be so held with no central control. There is no general taxation which can be a source of income to the Central Government. As a matter of fact, the Rases or chiefs are all powerful in their provinces. Since they are unpaid, they are free to take whatever they want from their subjects and give a portion to the Central Government. The Central Government is supposed to depend on Customs duties (10% duty on all imports) and a levy on all forms of production. But since their collection is left to the Rases, the revenues are subject to constant fluctuations. Neither is there a unified currency system. The coins in use are the Maria Thesia and Manelik silver dollars; but barter is still extensively used, bars of salt and cartridges being given in exchange. Abyssinia has no access to the sea since she has no port, and so has to rely on the mercies of the French, Italians, and the British who are in possession of all the coast. The lack of a sea-port has considerably impeded her economic and political development. It is no surprise that under these circumstances Abyssinia has remained weak and an extremely conservative country, not subject to any influences of civilisation.

Added to these internal difficulties, she has had to contend against the ambitions of powerful neighbours France, England and Italy, of whom Britain has the largest interests. About 2,000 miles of British territory run along with the Abyssinian boundary, while Italy comes next with 1,100 miles. As the frontiers between these territories are not at all well-defined, border conflicts have been very common and frequent. Italy has been the worst sufferer and has time and again been complaining of the prevalence of a state of practical lawlessness constituting a serious menace to the peace of her possessions. All along the western borders of Italian Somaliland and Jubaland, to a depth of about 60 miles, there is a vast waterless stretch of "no man's land," of scrub and bush occupied by turbulent nomadic tribes who make raids not only into the Italian Somaliland but also into the British territory of Kenya. The lack of adequate communications and contact between the central government and those tribes has considerably handicapped the Negus from putting a stop to these raids. The potential dangers of

the existence of this " no-man's land " and the ill-defined boundaries will be apparent on a study of the developments that have taken place in the Far East under similar conditions, where Japan has been fomenting trouble in the nebulous frontiers of the Manchukuoan state and trying to create an autonomous state in North China. The same causes are operating to bring about a violent clash between Japanese-controlled Manchukuo and Soviet Russia on the Mongolian Border. On the part of powers intent on finding out pretexts for aggression, frontier incidents come in very handy to start a conflagration. It is also abundantly illustrated by the case of Italy which made the Wal-Wal incident in itself quite a minor one—an excuse for the declaration of the present war on Abyssinia, in spite of profuse apologies and repeated assurances on the part of the latter to make ample amends and adequately compensate Italy for it.

The land of the Queen of Sheba is further reported to be abundantly supplied with minerals and oil. There was a good deal of excitement in Europe over the Rickett oil concessions which were arranged by Abyssinia just before the declaration of hostilities. There is some oil in the Danakil area while it is reported to have been oozing from the country in and around Harrar and in regions to the immediate north of it. The alluvial sand of the Blue Nile is stated to contain rich deposits of gold while extensive deposits of silver, platinum, copper, coal, iron and mica have been found in its neighbourhood and in the south-western region, in the land of the Gallas—soft iron has been found to exist in the region of L. Tana and the mountains bordering the Sudan. Valuable deposits of potash salts are said to exist in the Asal salt plains in the north-eastern part of the country close to Eritrea and their exploitation appears to have been carried on with Italian capital. But none of them are sufficiently developed yet except platinum. The existence of this metal was discovered about 1926 and a French company is producing it in commerical quantities. At present the yield is only 3% of the output of the world, about 7,000 ozs. a year, out of a total production of about 24,000,000; but the possibilities of development in this industry seem to be very great. Reliable data go to show that it is only the outer fringes that have been touched and that there are still miles and miles of this stuff. Agricultural wealth is also equally abundant and there is no gainsaying the fact that Abyssinia will prove to be an excellent country for development. Excellent cotton can be grown in the region of Lake Tana and wheat and cereals in plenty in the Tigre province. In the north-western plateau round the Danakil region are rich fields of Jagar,

corn, wheat and barley. Sugarcane, coffee and wine thrive well in many districts. Besides the coffee cultivated in the highlands, there is also a type of coffee growing in a wild state in southern and western Abyssinia yielding a berry known as Abyssinian coffee whose supply is stated to be unlimited. The forests contain excellent timber as also valuable honey and wax. Stock-raising is also carried on all over the country; and the wool, meat and live-stock on the Abyssinian highlands would probably provide welcome supplies of yarn for the factories of Piedmont and Lombardy and meat for the canning industry in Eritrea. Thus from the point of view of economic exploitation and development no country can be more suitable than Abyssinia.

It is not surprising that the Italian dictator should have great hopes about the resources of Abyssinia and the possibilities of providing "an Italy beyond the seas," for her growing population at home and abroad. But grave doubts have however been expressed in regard to the suitability of Abyssinia for settlement by European races. In spite of the fact that the Italian has great powers of adaptability as a colonist with his low standard of living, Abyssinia will prove a bad place even to him. It is said that excepting for the southern part of the central plateau, all other parts of Abyssinia are difficult to develop in view of the enormous physical strain that it is likely to involve to make it habitable. Even assuming that it is possible to overcome the difficulties, settlement will not be such an easy affair considering the fact that under distinctly more favourable conditions, it took as much as a period of 25 years to curb Morocco and 20 years for Italy to quell Cyrenæica (Italian Libya) with less than a population of 200,000 natives. In the first place road-making, one of the very first things to be done before permanent settlement is thought of, is by no means a feasible proposition or an easy problem in a plateau like Abyssinia, which is estimated to cost about £2,000 per mile. Given unlimited resources and very favourable conditions, it may take about 10 years to settle about 1 million inhabitants in the country, but this bears only quite an insignificant proportion to her rapidly growing population. Further, has Italy succeeded in fully utilising the present colonies of Eritrea and Somaliland to dump her surplus population? Not at all. The density of population in Italy is only 358 per square mile as compared with Belgium (700), Netherlands (627), Great Britain (468), and Germany (372). Yet those countries have solved their problem of population in different ways, primarily by the gradual industrialisation of their countries. For this, of course, Italy wants

coal, iron and raw materials; and from this point of view the conquest of Abyssinia appears to promise hopes for Italy to mitigate in some measure her present dependence on the foreigner for these articles. It has been suggested that the conquest of Abyssinia means greater security to the Italian colonies in North-East Africa. This is an extremely doubtful proposition. The probabilities are that it may lead to contrary results. The Abyssinians, hardy and revengeful people as they are, famous alike for the snipes and guerilla tactics, cannot be expected to sit down quietly under Italian domination. With all her mechanised army and air force the progress of the campaign has been remarkably slow. However, from a strategic point of view Italy will have obtained a valuable possession by the conquest of Abyssinia.

Besides these climatic and physical factors there are others also which have to be taken note of by Italy in her designs of a peaceful settlement in Abyssinia. These are the economic interests of Great Britain and Egypt. To appreciate the real position, we must visualise the picture of an Italian conquest in Abyssinia. In the first place, Italy will become suddenly interested in the control of the Suez canal. The British interests in that region are too vital to be easily brushed aside by Italy. Who knows that Italy will not attempt further expansion in North-east Africa; and her influence in Egypt and Sudan will not only provide her with a new market for her products but also enable her to obtain an almost inexhaustible supply of cotton of which she is in very great need. This is not a picture that Britain will like to envisage before her under any circumstances. Further there are the British interests in the control of Lake Tana, which is situated in the N. W. part of Abyssinia. The region is one that receives copious rainfall which can flow out only through the gorge of the Blue Nile to the Sudan and Egypt. The difficulty is rather one of regulating that supply so as to make it available throughout the year by the construction of dams or barrages, and to that extent any power that is in possession of this region can affect the economic prosperity of Egypt and the Sudan. Thus more is involved in this Italian venture against Abyssinia than is apparent on the surface and the whole problem is therefore beset with difficulties of first-rate magnitude which will have to be negotiated before the Duce can assure himself of a peaceful occupation and settlement in the country.

The Tourist Industry in the West

By

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Migrations in History have proved man to be one of the most locomotive of animals ; and modern transport by land, water and air have made him outstrip all of them in locomotive capacity. While religious motives have been responsible for the streams of pilgrims to certain lands and cities, the modern tourist in the west is impelled mostly by the motives of curiosity and love of pleasure and sight-seeing. With the great changes in modes of transport in modern times, tourism has become an important industry in most progressive countries of the world. In fact, in Switzerland (which has been called *the playground of Europe*) it is the main industry ; and it is in a fair way to it in certain other countries like Cuba, Canada, Norway and Finland. France, Germany, Italy and England as well as most other European countries derive a considerable income every year from tourists of whom Americans form a large percentage. During my recent European tour through 15 countries, I was impressed by the methods by which this industry was fostered and promoted in those countries. They deserve to be studied and adopted in our land, which is so full of historic cities and of the finest natural scenery in the world.

The development of the tourist trade is primarily the result of co-operative activity in those countries on the part of the private interests directly concerned such as railway and steamship companies, hotels etc. Such co-operation has also been fostered by chambers of commerce, boards of trade and similar bodies. National, provincial and municipal governments have also evinced a good deal of interest in this matter. Western nations have employed for publicity purposes tourist advertising in a highly organized form such as advertising in newspapers and magazines, posters, guide-books, maps, folders, pamphlets, films, radio, etc. Tourist bureaus are maintained by many countries with several branches abroad.

The reason why nations attach so much importance now-a-days to tourist traffic is not merely because of the tourist's expenditure for transport, food and lodging, amusements, souvenirs etc. Tourists become directly acquainted with the commodities of the countries in which they travel, which they would naturally advertise in their own by word of mouth as well as by samples. Hence, the great

official attention and encouragement that is now-a-days paid to the growth of tourism. The tourist now finds official welcome; and national tourist offices and information bureaus help to expedite his travels and make his stay as pleasant as possible. Advance information is available regarding charges for room and meals in foreign countries, even before the tourist leaves his own country. Travel literature is freely distributed from official tourist bureaus, which also answer queries personally or by mail.

In my recent travel I enjoyed the benefit of some of the concessions offered in Italy and Germany in the shape of reduced railway fare for foreign tourists who stayed in the country for more than seven days at a time. Germany has gone a step further than any other country by giving registered marks for tourists at a very much cheaper rate than ordinary marks in exchange for £ sterling with a stipulation that these registered marks are not used for the purchase of commodities.

Besides the various forms of advertisement, mentioned in a previous para, international fairs and exhibitions contribute to a large extent to the promotion of tourism. Simplification of entry formalities, and reduction or abolition of visa fees are other methods of tourist encouragement, adopted by some countries. The post office often contributes its share by issuing postage stamps containing views of interest in the land, and by stamp cancellations advertising exhibitions or other attractions on out-going letters. The use of the radio and the motion picture for his purpose has already been mentioned. The direct interest of many foreign countries may be traced to the ownership of railway or steamship companies.

Usually private agencies such as hotels, railways, steamship companies, bus companies, municipalities, touring clubs etc. coöperate and print travel literature in foreign languages and distribute it abroad. A common form of publicity is the affixing of hotel and transport labels on tourists' baggages.

On the Hungarian frontier, the customs officials distributed to us travel literature, only a small sum being spent on newspaper and magazine advertising by that Government. There is, however, in that country a highly developed system of coöperation, whereby a book of coupons may be purchased which entitle the tourist to a number of extraordinary privileges such as a 25 per cent reduction in the charge for a visa fee, a like reduction in the cost of transport from the border to Buda-Pesth, three-days' board and lodging in a first-class hotel, transportation to and from the station of arrival for tourists and

their baggage, a *full bath* at a well-known spa, reduced prices in shops and theatres etc.

The rapid growth of tourist agencies such as Thomas Cook & Son, American Express Co. and the like with branches in several countries, and sometimes all over the world has been helpful to an extraordinary degree in the promotion of tourism. They offer all sorts of facilities and conveniences to the intending tourist, who can obtain any kind of information and service regarding travel by any means of transport in any part of the world. Issue of travel tickets by railway, steamship or air-ship with all the available concessions, removal of baggages, banking and exchange facilities, issue of travellers' cheques and letters of credit, fixing up hotels and reservation of accommodation, arrangements for local sight-seeing in the cities visited and for short excursions in the neighbourhood, supply of travel literature including guide-books, maps, etc., services of local guides knowing several languages—these are some of the important ways in which these tourist agencies are helpful, making travel comfortable, enjoyable and instructive.

India is a large country with varied physical features, a long history behind it and several distinct cultures in the various parts of the land. It contains a large number of historic cities of great architectural interest and monuments of archaeological value, as well as very high mountains, large rivers, dense forests, which are all of the highest scenic interest, most attractive to the modern educated tourist. Within the country itself, the habit of travel is inherent in the people, who have been making constant and distant pilgrimages through the ages in this land of holy rivers, holy mountains and temple towns. Modern transport of all kinds has been introduced ; and is developing more or less rapidly. But there has been no deliberate or adequate attempt at the promotion of tourism in this country as in the progressive countries of the West. No doubt, the Indian Railway Board is advertising to some extent in England and America ; and Messrs. Thomas Cook and Son do similar work as part of their general business. The Indian Railways are just beginning to grant occasional seasonal concessions. But there is nothing approaching the systematic co-operative advertisement and service with various kinds of concessions that one finds in the West. Nor are the administrative authorities national, provincial and local, imaginative enough to foresee the pecuniary and other advantages to the various kinds of business by systematic propaganda in this direction. If tourism is sought to be promoted as is done in all progressive countries, there is no doubt that it will go some way towards absorbing some of the educated unemployed,

whose number has been mounting up. A Ram Mohan's pilgrim special or a Mahadeva Iyer's conducted bus tour is but a drop in the ocean, compared to what can be done in this line. Western methods of foreign propaganda and advertisement, and organized local co-operation have to be studied and practised on a large scale, if tourism is to become one of the flourishing industries of the land. The catering, commercial, transport and other concerned interests have to join hands, and attract and serve the foreign tourist as well as the local and inter-provincial. Local governments and administrations have also to contribute their share by advertising places of scenic and historical interest. What is required for the growth of this industry is a combination of knowledge, imagination and organised enterprise. This is a good instance of the principle of supply creating demand.

The Geological Formations of South India

By

Mr. P. Sridhara Rao, M.A.

Geologically India is divided into three divisions—the Peninsula, the Extra-Peninsula and the Indo-Gangetic plain. The area under description is a part of Peninsular India, and excludes Cutch, Bihar and the northern half of the Central Provinces and Central Indian States and Bengal.

The geological record in South India is as imperfect as in numerous other places in the world. The oldest rocks of the Peninsula are the Archaean rocks which underlie all later formations. They are unconformably overlaid by the oldest sedimentary formations of Pre-Cambrian age. A very great interval of time must have elapsed between the Archaean rocks and the deposition of later sediments. During that long interval the rocks were lifted up to form mountains, and later were denuded, and finally the area was submerged under the ocean to allow sedimentation. The oldest sediments are separated again by an unconformity. This unconformity also represents a very large interval. Nothing can be said of the geography of the area during that interval. But it is certain that the South Indian Peninsula attained a shape very similar to the present one; and through all the later geological ages has not undergone a subsidence except along the coast. From the Permo-Carboniferous to Cretaceous times there took place deposition of sediments along long trough faults, either basins of rivers or large inland lakes. These formations are known as the Gondwana rocks. At the end of the period there was a violent volcanic outburst; and the basalts successively thrown out occupy more than half the area under discussion. There are scattered outcrops of marine beds of the Cretaceous period and Tertiary era along the Coromandel Coast. Of course, they lie unconformably over the sediments of previous ages. In this paper I have attempted to describe the various formations briefly, confining myself mostly to a description of the locality and the rocks of the geological formations. Very reluctantly I have avoided a discussion of the life in each series for fear of length.

The oldest rocks on the earth's surface are those which underlie the earliest sedimentary rocks. They form the basement or the foundation for rocks of all the subsequent ages and are therefore known as the 'Basement complex' or 'the Fundamental complex'.

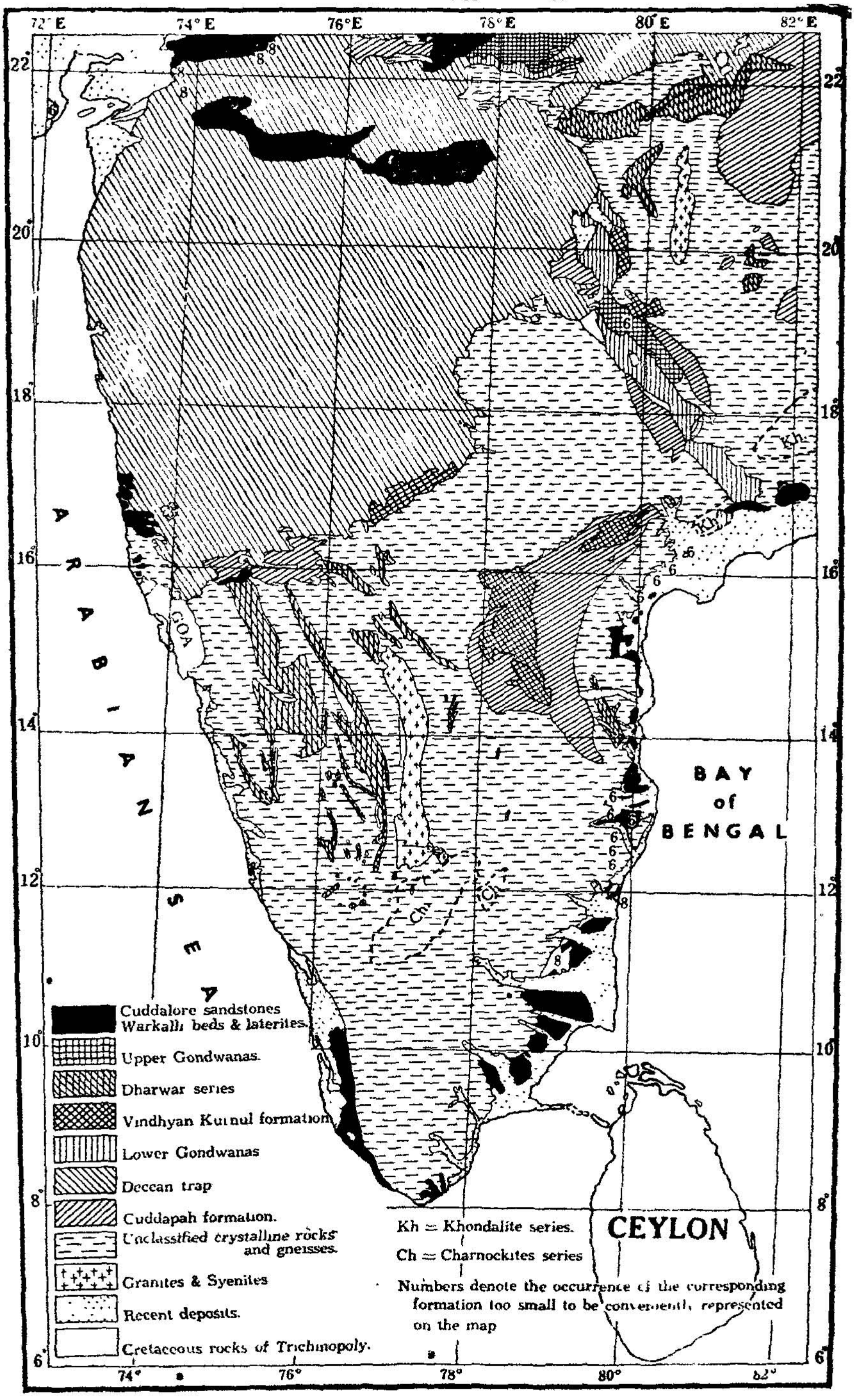
They have undergone metamorphism of great intensity more than once. In structure they are all gneissose showing foliations and bandings. The foliations sometimes lead to a schistosity, and the rocks decrease in felspar content and pass into schists of mica, chlorite or hornblende. The rocks are very variable in chemical composition. Their origin is obscure. Either they may be a part of the original crust of the earth formed during the cooling of the molten globe, or they may be sediments deposited under conditions far different from those at present existing, or truly igneous intrusions into the first-formed crust or either of the above metamorphosed. The rocks are very complex in these details and do vary in different regions.. This Archaean complex is classified into three different groups all of which are present in South India. The gneisses of Orissa, the Salem gneisses, the gneisses forming the floor of the hills in the southern districts of the Madras Presidency and the gneisses and schists underlying the coastal deposits on the east coast south of Nellore are made up of representatives of the group known as *Bengal gneiss*. They are all finely foliated gneisses, containing usually the basic felspars. In some places they are schistose. In Orissa the gneisses and schists contain the aluminium silicate sillimannite, and show evidence of being metamorphosed sediments. The origin of others is very obscure ; they may have been metamorphosed igneous rocks or sediments. The second group known as *Bundelkhand gneiss* after the place in Central India, is an acid rock showing only rude foliation. In structure and composition the rocks of this group are similar to granites. But in the field they differ from instrusives in the large area which they occupy in the field. It has been suggested that they are intrusives which have remelted the rocks among which they intruded so that the relationship to the other rocks is obscured. Schists are not much associated. Representatives of this gneiss we find in Bellary, the northern districts of Mysore, Cuddapah and North Arcot. A third of this Archaean system is confined to the Madras Presidency. The rocks are undoubtedly intrusive, varying in chemical composition from the acid granite through syenite and diorite to ultra-basic pyroxenites and amphibolites. All the rocks of this group are dark in colour, due to the prevalence of a large quantity of iron in the ferro-magnesian minerals as well as intrusions in quartz and felspar. The rocks show clear evidences of intrusion among the older Bengal gneisses or the Bundelkhand gneisses. These rocks, the charnockite series, make up the hill masses of Palnis, Shevaroys, Nilgiris, the smaller hills in the districts of Chingleput and South Arcot, and some hills in North Arcot and Madura districts.

Belonging to the Archaean group are the next system of rocks known as the *Dharwar system* after the town in North Kanara. This system consists of very different kinds of rocks. Many are sedimentary rocks, that have been folded, crushed and recrystallised, some rocks are formed by chemical precipitation and the rest are igneous, both plutonic and volcanic. All the rocks have undergone metamorphism of a high degree. Limestones have become marbles, shales have been converted into schists and andesites have become hornblende schists. Associated with the Dharwars are a number of intrusions, some of which carry gold. The gold fields of Mysore are situated on the outcrops of some of the quartz veins that cut through the hornblende schists of that region. The mica of Nellore is from the pegmatite veins that cut through the plutonic intrusions of Dharwar age. The manganese ores worked in the Vizagapatam district are from the manganese-bearing rocks of Dharwar age. The mangnese silicates of the plutonic rocks have undergone a kind of chemical decomposition, setting free the manganese oxide. In the west of Mysore the Dharwar rocks give workable ores of manganese by sub-aerial alteration of the manganese-bearing laterites. The greatest extent of Dharwar outcrop is seen in Mysore state and Bellary district, where all facies have developed. Outliers of the Dharwars are seen in the older gneisses in the north-east of Madras Presidency as also in the Central Provinces and Bihar and Orissa. The major portion of the Dharwar rocks have been washed away by denudation; and the outcrops now seen are all synclinal amidst older rocks. It is quite probable that a large quantity again lies buried under hundreds of feet of Deccan trap. While the relationship of the rocks in British India lead one to suppose that these are younger than the gneisses, the detailed study in the field in Mysore State of 30,000 square miles of exposures has led the Mysore geologists to think that the Dharwar rocks, whether intrusive or not, are all older than the gneisses. But undoubtedly they are earlier than the next sediments belonging to the Cuddapah system.

The *Cuddapah system* consists of a vast thickness of sedimentary strata, laid unconformably upon the Dharwar rocks. The Dharwars must have been raised, denuded and again submerged to allow the deposition of the Cuddapahs. This long interval of time has left no records in any other part of the world, and we can have no idea of either the geography or the length in time of the interval. The rocks composing this system are compact shales, slates, quartzites and limestones, all together forming some thousands of feet. The metamorphism undergone by these rocks, considering their ancient age, is very little. The quartzites formed are due to

GEOLOGICAL MAP OF SOUTH INDIA

Scale 1" = 66 miles (approximately).



cementing of the silica grains of the sandstone by secondary silica, the shales are at the most converted into slates and never into phyllites or schists. The limestone which yield the familiar Cuddapah slabs forms, together with large thickness of shales, the formations known as the upper division of the Cuddapahs. It is strange that these sediments though eminently fitted to preserve fossils do not contain any. This is singularly unfortunate as, if they had preserved organisms, we could have guessed about the beginnings of life. As it is the rocks in the neighbourhood of the Cuddapah and subsequently laid sediments contain an abundance of fossils, which are neither simple nor the most primitive. Perhaps there were local conditions in the Cuddapah sea which prevented the life of organisms possessing hard parts. In distribution the Cuddapah system covers a large area in Cuddapah and Kurnool districts, the south-eastern parts of Hyderabad State and the southern portions of the Central Provinces. In the absence of fossils no definite age can be worked out regarding similar formations. Local names are given for different exposures. Thus we have the Papaghni series in the valley of the river of that name in Cuddapah, the Gwalior series at Gwalior, the Penganga beds in the valley of the Pranhita. The Upper Cuddapah rocks, consisting of quartzites, shales and slates with associated limestone beds, rest unconformably on the Lower Cuddapahs in a number of places. The best exposure is the *Nallamalai series.* The Nallamalai range of hills are composed of this series of rocks, consisting of quartzites in the lower part and shales and slates in the upper. Other important exposures are in the east of Belgaum, in the Godavery valley and in the Kistna valley. All the exposures of the Cuddapahs form a crescent with the concave face to the east. These Cuddapahs are unconformably overlaid by the next series of sediments—the Kurnool series.

The next system in Indian Geology goes by the name of the *Vindhyan system.* Rocks of this system consist of sandstones, shales and limestones, which have a maximum thickness of 14,000 feet. They are the rocks which form the Vindhya Mountains, separating Hindustan and the Deccan. The rocks are well developed in the north of the river Narbada, in the State of Rewa and in the Central Provinces. Nearer to Madras we find representatives of the Vindhyans overlying the Cuddapah rocks on the eastern side. It is the lower division of the Vindhyans, and is known as the *Kurnool series.* The rocks are sandstones and shales. At the base of the Kurnool series there are bands of coarse sandstones called the Banganapalle beds, some bands of which have given the

diamonds in the Kurnool and Anantapur districts, e.g., at Banganapalle and Vajrakarur.

The Vindhyan system is unfossiliferous and gives no clue to its age. But from its resemblance to the Pre-Cambrian sandstones overlying the gneisses in Scotland it is inferred that they should be of Pre-Cambrian age. The Vindhyan system is overlaid unconformably by all later formations. In South India there has been a long break in deposition after the Vindhyan. The break is very profound and marks a period of great crustal disturbance and adjustments. The beds overlying the Vindhyans belong to a freshwater facies, and form the lowest and the oldest strata of what is known as the Gondwana system

The Gondwana system comprises of very characteristic terrestrial deposits, ranging in age from the upper carboniferous to the end of the Jurassic. But for a few local unconformities, which are inevitable in continental formations and in the running water of rivers, the enormous continental deposits form one conformable series from top to bottom. The disturbance of the crust in the raising up of the Vindhyan and older formations had their reaction. A number of longitudinal faults opened into which sank blocks of land. In these depressions were laid the detritus from the land-mass. With deposition further sinking took place, giving rise to the enormous thickness of the system. The nature of the rocks, the coal and the plant fossils together with the remains of crustaceans and reptiles point to the terrestrial nature of the deposits. Some of the sediments have been laid in lake basins, while a large majority have been laid in slowly sinking river basins. This system is interesting in that almost all the coal of India is derived from the sediments of this age. The stability of the Indian peninsula is responsible for the preservation of coal in horizontal or slightly inclined beds, as also for the freedom from changes into graphitic schists. The outcrops of the Gondwana rocks are scattered in South India in number of places: (1) in the eastern parts of the Central Provinces; (2) along the Mahanadi valley; (3) along the Godavary valley up to the head of the Godavary delta; and (4) along the East Coast between Rajahmundry and Tanjore. The Gondwanas are divided into three divisions—the lower, the middle and the upper, corresponding to the Permian, Trassic and Jurassic periods of European Geology.

The lower Gondwanas are classified into two series—the *Talchir* and the *Damuda*. The Talchirs occupy the largest area among the rocks of the system, being present in every region where the Gondwanas prevail, except in the East Coast. The lower series of

the Talchir show by their content and by the characteristically striated and faceted blocks in a fine silt matrix and by the presence of undecomposed felspar grains in the sandstones that glacial conditions prevailed in the region. These characters are best seen in the Talchir district of Orissa. The upper stages of the Talchir have a number of thin coal beds among conglomerates, sandstones and shales. They outcrop in the Mahanadi valley and in the Satpuras. The next series, the Damuda series, are the most important formations, as they yield more than 90% of the coal in Indian collieries. Apart from the coal occurring in thick seams (40 to 80 feet), the coal is of good quality. It is the Damuda coal that is mined extensively in the eastern parts of Bihar, the Raniganj and Jherria coal-fields. The coal south of the Satpuras in the Central Provinces (Pench valley) as also that of the Singareni collieries in Hyderabad State are also from the Damuda series. But in quantity and quality these are next in importance to the coal of Bihar

The next system of the Gondwanas is known as the *Middle Gondwanas*. These lie a little unconformably over the Damuda series. There are marked differences in the rocks and in the life they preserve from the Damuda series. The middle Gondwanas resemble in their massive coloured sandstones and the poverty of the soil content the Triassic system of Europe. A period of low rainfall or desert conditions seem to have existed in this region, supporting but few animals and plants. The reptiles preserved show clearly the age of the Middle Gondwanas. This system is well represented in the Mahadeo and Pachhmarhi Hills in the Satpura range, while some parts of the Godavary valley also expose the rocks. The topmost beds of this system, known as the *Maleri series*, are seen in the Godavary near Sironcha (18°51'N. 80°1'E.) on the frontier between Hyderabad and the Central Provinces. The beds here are red clays with inter-calated pale-coloured sandstones. The shales are fossiliferous. The Maleri series is overlaid conformably by the *Kota stage*, the lowest stage of the Upper Gondwanas.

The Upper Gondwana System is the last system of the continental deposits. It presents no less than three different facies. The rocks of this system are also massive sandstones and shales, but they differ from the Middle Gondwanas in having some limestone beds and thin beds of coal. In the Rajmahal Hills in Bengal there seems to have been a volcanic eruption. Horizontally bedded basalts of great thickness are associated with the fossiliferous sandstones. The Upper Gondwanas are interesting to us in that we find a marine transgression on the East Coast. The temporary conquest of the sea has left behind unmistakable records.

In the Central Provinces sandstones and a few bands of limestone with thin seams of coal overlie uncomformably the Middle Gondwanas. They are fossiliferous containing numerous plant fossils of a newer age than the Rajmahal flora. Similar rocks occur in the Godavary valley near Chanda. The rocks of the Kota stage are fossiliferous and overlie conformably the Maleri stage. The Kota stage is overlaid by unfossiliferous ferruginous sandstone and conglomerate.

Along the East Coast the Upper Gondwanas present a still different facies. While all the rest of the system are continental, either fluviatile or lacustrine, on the East Coast rocks of this age have been formed in a shallow sea. The proximity to the sea has washed away a large part of the rocks leaving detached outcrops, near Rajahmundry, near Ongole and near Madras. In the Godavary delta the Upper Gondwana rocks assume a thickness of about 600 feet, and consist of conglomerates and coarse sandstones with a shale bed in the middle (the Raghavapuram shales). The shales contain fossil flora. Near Madras we find Upper Gondwana rocks in Sriperumbudur and near Sathiavedu. The formation in Sriperumbudur is a very soft shale known locally as *seekai parai*. It is obtainable on the surface, in channels and in wells. Numerous ill-preserved plant impressions are seen in the shale. The flora is related to that of Jubbulpore. Near Sathiavedu we meet with sandstones of this age. The conglomerates of the Nagalapurum Hills cannot have been laid in a sea. These conglomerates, whose thickness is more than 400 feet, have been formed on the coast by powerful breakers on the cliffs of Cuddappah quartzites. The poverty of fossils in this area is due to the proximity of the coast.

Cretaceous System.—In the Cretaceous system we find rocks of different facies developed in South India. There are true marine beds in the south-east in Trichinopoly and a part of South Arcot: fluviatile deposits occur all over the Central Provinces and the Deccan. It is in the latter part of this age that there took place gigantic volcanic outbursts, the extrusive rocks covering a large part of South India from Southern Rajaputana to Dharwar and from coast to coast in the east-west direction. It is this volcanic eruption that made the Deccan plateau. The traps or the basalts of this system cover under them all the previous geology of the area.

The East Coast Cretaceous.—In the Upper Cretaceous times over several parts of the world there were transgressions of the sea. A similar transgression in the south-east affected the present Trichinopoly district. On the greatly denuded Jurassic rocks, and in

some places directly on the gneiss are deposited the sediments of this period. The deposits are exposed in the Madras Presidency as inliers among the later rocks, in the Trichinopoly district. In extent the rocks cover only a few hundred square miles. They are disposed in a line parallel to the present coast, and have a breadth of about 15 miles. The lowest stage, called the Utatur stage, is the westernmost and oldest. It is made up of a lower layer of coral limestone succeeded by fine silt, clay and sandstone, in all assuming a thickness of about a 1000 feet. It is succeeded unconformably by the Trichinopoly stage, developed in the neighbourhood of Trichinopoly town. It is made up of gritty sandstone, gravel and shelly limestones. The nearness to the coast is shown by numerous granite and gneiss pebbles, besides large pieces of cycad wood, sometimes even trunks of trees, fossilized in the sand. These are best seen near Tiruvakkarai. The youngest stage is exposed near Ariyalur. This stage is made up of argillaceous strata and sandstones, regularly bedded. Fauna is rich in all the stages, but there is a greater variety and number in the Ariyalur stage. While the Utatur and Trichinopoly stages can be divided into zones by the species of ammonite, the Ariyalur stage contains in abundance the gastropods and shows a decline of the cephalopods. Vertebrate fossils are many.

The Deccan Trap.—At the end of the Cretaceous period there took place a volcanic eruption in the Indian Peninsula on a very large scale, unmatched by any other eruption in the world. These eruptions were of the fissure type ; mobile basic lavas were extruded from longitudinal fissures, and basalts were formed. By successive extrusions several thousands of feet of horizontally laid basalts were formed, which covered an area of about five lakhs of square miles, that is slightly less than a third of India. But denudation has removed a large portion of the basalts, now leaving about 200,000 square miles of the rock. The rocks are horizontally bedded, except in the neighbourhood of Bombay where there is a gentle slope of 5°, thus locating the fissures there. In thickness individual flows are about 15 feet thick, while exceptionally there are some beds about 50 feet thick. The beds are separated in many instances by true sedimentary beds laid down by rivers. The deposits are volcanic detritus, clays and impure limestones. They contain a number of fossils of terrestrial animals like frogs, tortoises, insects, crustacea and certain fish. While the main mass of the Traps cover large parts of the Deccan plateau, Central India, the Central Provinces and Kathiawar, Guzarat and Cutch, an outlier is seen near the East Coast in the village of Pangudi, a few miles west of Rajahmundry. It is here that a hill of basalt of about

200 feet has a few inter-trappean beds of impure limestone, which contains certain gastropod and brachiopod shells. I shall not here describe either the petrography of the basalt nor enter into a discussion of the age. It has been shown by the infra-trappean beds in the Narbada valley that the eruptions must have taken place towards the end of the Cretaceous period. The upper limit is fixed by a few beds in Western Sindh, among which are inter-stratified a few lava flows. But, palaeontological evidence is not very trustworthy here, as the fossils present are not very sure guides. There is a view the Traps are of early Tertiary age.

The Tertiary Systems.—The extrusion in the end of the Cretaceous times was only a sign of inter-crustal disturbance. At the beginning of the Tertiary era there began movements of folding on a gigantic scale ; the sea of Tethys, which was subsiding since the Cambrian period reacted and the Himalayan range began to rise up and drive the Tethys to the north. In the Tertiary system in the rest of India profound changes in the method and material of sedimentation took place. But the South Indian peninsula had been already formed. Prior to the Tertiary era the block of land on the west had sunk to form the Arabian Sea, the Cretaceous Trichinopoly sea was receding back, the Mahanadi, the Godavary and the Kaveri had already commenced their work of degrading the plateau and carving their courses. Thus new sediments were not being formed except on the eastern and western coasts. A slowly receding sea laid down either sandstone or clay on the shore. In the Coromandel Coast sediments of variable composition and thickness were laid. They extend from Cuttack to Tinnevelly. The sandstones are exposed in detached outcrops in Orissa, Nellore, South Arcot and Tanjore districts. They lie unconformably on the Gondwanas, Jurassic or Cretaceous formations or the older gneisses. Full of fossils the Cuddalore series, as they are called, show their Tertiary age. The Cuddalore series are obscured in a number of places by Pleistocene and recent alluvium, and in a number of others by a lateritic cap. In the west a small outcrop of Middle Tertiary limestone is found near Quilon. With the limestones there occur also some bright-coloured sands and clays, enclosing some lignite with lumps of amber. A similar deposit is found also near Ratnagiri, further north. On the Travancore coast are also present a series of beds composed of sands, clays and lignites called the Warkalli beds.

Post-Tertiary.—The most important Pleistocene formation is the laterite. It is a rock or a name given to a number of rocks of different composition, and different origin. We cannot here enter

into the question of their origin. That subject has attracted much attention and has been discussed by the Madras Geographical Association even in its first year of existence. The laterite is found to be of two different kinds, one capping the Western Ghats and occurring at an altitude of 2000 feet or more and the second occurring in the coastal plain. In some places the laterites are workable ores of iron, in others of manganese and in still others of aluminium. The other deposits of the Pleistocene and recent periods are the black cotton soil, a product from the weathering of basalt, sand dunes on the Malabar coast and in Tinnevelly, the deposits of salt, sometimes gypsiferous, along the beach, local deposits of gypsum in the Madras City, the river terraces of the Godavary, the Kistna and the Cauvery, the cave deposits of Kurnool and the alluvium laid by the rivers at the present day.

APPENDIX I

Table of Geological Formations.

Age.	*Equivalent Formations in South India.*
Pleistocene and Recent	Cave deposits of Kurnool, recent alluvia of the rivers, sand dunes, etc.
Tertiary	Cuddalore sandstones. ,, ,, Warkalli beds.
Cretaceous	Marine cretaceous of the East Coast. Deccan Trap.
Jurassic	Marine Jurassic ,, ,,
Triassic	Gondwana Rocks.
Permian	
Carboniferous . . .	
Devonian	
Silurian	Absent.
Ordovician	
Cambrian	
Archaean	Vindhyan (Kurnool). Cuddapah. Dharwar. Archaean.

APPENDIX II

Glossary of a few technical terms occurring in the paper.

Brachiopods—A group of animals in which the body is enclosed in a shell formed of two valves.

Cephalopods—A group of animals which includes cuttlefishes, octopus and nautilus.

Crustaceans—A group of animals including crayfishes, crabs, shrimps, barnacles and water-fleas.

Extrusive rocks—Rocks formed by solidification of molten material thrown out by a volcano.

Facies—Condition of deposition.

Gastropods—A group of animals with a single unsymmetrical usually spirally coiled shell.

Gneiss—A rock in which irregular bands of granular minerals are seen.

Lignites—Partially decomposed wood.

Marine transgression—An encroachment of the sea on land.

Metamorphism—Alteration of rocks resulting in changes of structure or composition or both.

Phyllites—A compact rock with its minerals less prominent than in a schist.

Plutonic (or *intrusive*) *rocks*—Rocks formed at great depths, in contrast to rocks formed on the surface by volcanic action.

Schist—A general term for metamorphic rocks in which minerals are placed along bands. Schists may usually be divided into thin sheets, which are mineralogically similar, whereas in gneisses the tendency to split is much less.

Syncline—A geological structure of the shape of a trough.

A Pilgrim to Kasi

By

Mr. J. A. Yates, M.A., I.E.S., (Retired)

"The Lord Siva thought that I should go on a journey abroad, and to that end caused my masters of the Supreme Court to give me leave. So it was that I set out on my pilgrimage to Kasi; I left Madras at 9 o'clock at night on Tuesday, the 18th of May, 1830, and reached Madhavaram, which is about an hour's journey from my garden at Tondiarpet." With this characteristically simple and pious statement does Enugula Viraswamaiya begin the record of his pilgrimage.

The origin of this fascinating account by a pious, shrewd, kindly and tolerant Brahmin, of a journey, made at a time when the land was still in the aftermath of the long disorders of the eighteenth century, and when to travel was not easy and not without danger, was as follows. The author had a great friend and admirer, a non-Brahmin, Komaleshwarapuram Srinivasa Pillai, to whom as he had been asked and had promised, he wrote in the form of a diary, while the day's events and the thoughts they inspired and things seen on the road were fresh in his mind, letters that in the sum give a remarkable picture of things as they were then.

Here is Srinivasa Pillai's statement of how the book originated. "When he was setting forth on his pilgrimage I asked him to write to me periodically on matters of interest on his way, and he sent me at regular intervals accounts of his daily doings, of the thoughts Lord Siva put into his mind on this occasion or on that, of the help he received from strangers on the road, of those things that pilgrims like himself must provide in advance, so that a study of his book informs every pilgrim of all that he should see and know."

He tells us that the letters, put into book form, had been translated into Tamil by Panayur Vengu Mudaliar, and that another Mudaliar, Nagpur Viraswami had done a version of it in Marathi, 'which when the Resident of Nagpur saw, he asked the author for permission to translate it into English in order to make it well-known, but Viraswamaiya replied that he would himself make and forward an English version, and he actually translated it in part. Perhaps by the Grace of God some righteous man will some day complete it.'

Evidently at that time the book was in demand; indeed it was at the request of several Telugu notables that last of all he had the letters put into book form and printed under the title '*Kasiyatracharitramu*'. The first edition was issued in 1838, Puduri Narayana Sastri being Editor, to the order of K. Srinivasa Pillai. A second edition was printed, at the orders of Government in the Vartamana Tarangini Press by Puvvada Venkata Rau. Since then the book has been forgotten, and it is now almost impossible to get a second-hand copy.

When the author was born, his admirer and editor does not state. He prefaces the book with a sketch of his life, and account of his death. Viraswamaiya was evidently a man of unusual ability. Left an orphan with a widowed mother at the age of nine, at the age of thirteen he had attained such proficiency in English that he got the appointment of interpreter and translator in the office of the Collector of Tinnevelly; when fifteen, he came to Madras and became book-keeper and then Head Accountant in the 'English House of Agency'; and lastly took the post of Interpreter to the Supreme Court, which he held with the confidence and admiration of the Judges till his retirement in 1830. He was learned; he translated the *Sumatichandrika* and other works; "on the occasion of a great conference in this city concerning 'the lost month,' he established his point of view with such an array of quotations from the Vedas and sacred law-books that the members of the Conference, as a mark of the great delight they received, made him a presentation of a garland of jewels, and wrote him a letter setting forth his virtuous qualities." He was public-spirited and charitable; notably in the famine of that year Nandana; in public feasts to Brahmins; in feeding the poor. "He alone of the officials appointed to inspect that charity took pains to see that the rice for the poor was duly delivered in the morning. Every day he got from 1000 to 2000 markals of raw rice cooked, and, under his personal supervision, had the whole, without any harassment of the poor, distributed within two watches of the day. Day and night he put the whole force of his intelligence to use upon the business." He was deeply religious; observing all the rites that a pious Hindu should observe, he sought to keep the spirit of devotion. With personal devotion for his God, he combined tolerance of the forms of worship others used. This trait comes out over and over again in the course of his travels in the many reflections he makes on religion. Most remarkable is the comment he makes on the Muharram, "which began on the day he entered Hyderabad. He had no love, as he plainly shows, for the methods of Mogul rule; the disorder, the oppression, the chicanery are frequent subjects of his con-

demnation. But of Moslem religion he has not an ill word to say. 'On the ninth day the feast is as great a festival in Hyderabad as is the fesitval of the Hawk-God in Conjeeveram' the presence of the Supreme God blazes so brightly through the capital that many thousands of worshippers of other religions gather there and stay from the ninth day to the end of the feast. As sacred word has it, the Almighty, the One God, accepts worship of very kind and fulfils men's desires. And I, feeling as I did the radiation of the Supreme God's presence throughout those days of festival, and conscious that the place was holy at that season, was filled with deep praise of Him, that He should have brought me there." This record is characteristic of his attitude throughout his journey, and characteristically Hindu of the best type.

His death is described by his admirer in terms that are worthy of a saint. "At last the time of his dissolution arrived . . . He severed the ties of affection . . . .; he conquered the association of the body, the world and earthly laws . . . ; he became a solitary and for some days dwelt in a hermit's retreat . . . ; and by meditation . . . . realized the oneness of himself and God. At the very hour of the day of his death, when he proclaimed in the presence of all his friends his last renunciation, repeating the word OM and seated in the posture of meditation, he retained full consciousness up to the very moment that the breath of life left him, and knew that the soul is eternal and the body transient. Thus without grief for his relinquishment of the body, without pain and with joy, at dawn on Monday the eighth day of the dark fortnight of the year Durmukhi, 1760 of the Salivahana era, he left this corporeal body and, emancipated in his ethereal body, once more attained a dwelling in the eternal world of Brahma."

What was to him the supreme act of his life, the evident dream of his working years, his pilgrimage to holy Kasi, occupied a year, and a quarter of the time left to him after his retirement. He left Madras on May 18th 1830, and travelled by way of Tirupati, Cuddapah, Hyderabad, Nagpur, Jubbulpore, Rewa, Mirzapur and Prayag to Kasi, and reached Kasi on November 27th; stayed there till December 17th, and then returned by the East Coast route reaching Tondiarpet in the evening of September 3, 1831.

As a pilgrim, writing for the edification for future pilgrims, it was natural that he should pay particular attention in his record to the great shrines that he visited on his journey. Though Kasi was his goal, he diverged from the straight road and dallied on his

way to visit holy places that were as gateways to the holiest. Thus he turned aside somewhat to Tirupati on the hill, to Ahobalam, to Srisailam, and halted at Ramtek, and from Rewa, partly it is true because the road was better, instead of going direct to Prayag, struck off to Mirzapur, and so took in Vindhya Vasini. His narrative at all these places is held up, while he describes the condition of the temples; gives the substance of the *sthala-puranas,* details the ceremonies performed; compares local customs with those of the *Dravida* land; notes the sects of Brahmins, the defects in temple-service by the priests, the character, history or legend of such hereditary hangers-on of religion at Prayag, Kasi and Gaya, as the Prayagavalis, Gangaputras and Gayavalis; or, moved by the sacredness of a shrine, delivers himself of a religious homily. He tells his friend that he had intended visiting Ayodhya and other northern shrines, but that, when he reached the Ganges, home-sickness attacked him,—more probably attacked his considerable following—and he decided to turn homewards from Kasi, visiting Gaya, Puri and other shrines on the eastern route to the South.

In those days " from the people who fulfil vows to God Venkateswara at Tirupati, the company gets yearly about a lakh of rupees. On the hill itself for every act of service (*dharmakaryamu*) the Government must get a *fanam*." He makes no objection to pay such payments to the company, who did something, if only by way of protection, for the money they received. But of the Nawab of Kandanur " who gets by way of tolls, 18,000 rupees annually from the temple (of Srisailam)." he is somewhat condemnatory. " What happens to the temple does not worry him; if any repairs are made, he takes in tax the equivalent of the cost. Raja Chandulala (Diwan of the Nizam) started on some repairs but gave up in disgust with this sort of oppression." The same Nawab comes into the picture of the upper Ahobala shrine; " while in lower Ahobala there are a few Sudra huts, in the upper place there are none; pilgrims must put up in the temple itself. All over the country is dense forest, and there is danger from wild beasts. The water causes disease, so that men are afraid to stay there. The temples are so dilapidated, swallow-wort and thorn plants (*jilledu* and *palleru*) grow in the walls. In the month of Phalgunam there is a festival of Brahma, to which pilgrims flock and during which 400 pagodas are realized in customs (? tax); the Nawab of Kandanur takes it all, but has no further interest in the temples. Though here the reflected radiance of the Supreme God is made visible to man's sense and stirs them to devotion, the attendance one gets is by no manner of means an aid thereto." He frequently has some caustic comment on the temple priests.

Wherever he passed he took notice of temples, and frequently mentions shrines nearby that he did not visit. At Hyderabad he observes: "All round the capital are hillocks and hills in abundance. On the tops of many of the hillocks mosques have been built; of Hindu temples there are none, for they are not allowed to flourish". Later on, also in Hyderabad territory, he reached Dalavayi, a village with a shrine of Rama. The village belongs to the Zamindar of Chili. The temple, built in the southern fashion is not beautiful; its worship is forwarded by the Zamindar with every help from his estate. Round it is an *agraharam* of 30 Brahmin houses. This shrine in this Mahomedan State is like a lotus growing in a chafing dish, and is the only temple I have seen since leaving Tirupati in which the worship receives State assistance, and from enquiries I have made I learn there is no other."

His pilgrimage was undertaken as a pious duty; he was no ascetic and no mystic, but a man of the world, and rich man at that, who, having retired from active work, turned his thoughts with all sincerity to a period of devotion and spent in many famous shrines, with Kasi and holy Ganges as the apex of his aspiration. There was nothing of the quality of that Mahratta mystic, whose solitary journey to Mount Kailasa was so movingly described in '*the Holy Mountain*', a recent translation into English. He travelled in relative comfort and certainly not as a solitary. His record is not for mystics, but for well-to-do men of the world who should seek to do as he did. He tells us that at Kasi he had a hundred or so in his company. With him were some of his womenfolk, of whom his wife was one; he mentions her in an amusing consideration he made as to the desirability of her surrendering her tresses in sacrifice to Triveni at Prayag. He had fifteen Brahmins in his train. Most of his company however was composed of bearers, lascars, peons, armed sepoys whom he engaged for short and dangerous stretches of his journey; bullock drivers, tappal-runners whose services he obtained by his friendship with postal officials in Hyderabad and elsewhere; 'bangis' men to carry supplies, a *sais* to look after a pony he bought to carry anyone who fell sick on a stage of the route. He gives details of the pay he offered; thus he left Madras with six peons; at Cuddapah took on four Mahratta peons; in Hyderabad engaged a further six at seven rupees a head *per* month. He carried tents and engaged *Khalasis* to pitch and strike them. He had also one or two men to give medicines to the sick. From time to time he engaged men for a special purpose: thus, eight bearers at Atmakur to make the trip to Srisailam and back at four rupees a head. And besides all his own following he

records how stray travellers, especially Gayavalis and Prayagavalis, for whom he evidently had no great love, would hang on to him.

Despite the style in which he journeyed, the hardships were considerable and the dangers great. To begin with, the roads were generally bad ; day after day the road was hard and stony ; it ran over black cotton soil and the feet sank in the mire. When he comes to a metalled, a hard-rammed road (sadak), he mentions it with pleasure. It was such a road he chose to take him out of his way to Mirzapur ; it had the advantage too of being safe ; it was a company's road. Then there were difficulties of lodging ; 'serais' properly guarded against thieves, were rare : he had to stay in *chavadis*, making his own arrangements for the safety of his property and the cash he carried to pay his way ; he put up in Brahmin houses now and then ; he stayed in temples ; sometimes in shops ; occasionally in the tents which he carried with him. There were lastly the difficulties of food for such a large retinue ; most of them were people from the south and accustomed to rice, needing chillies and tamarind, commodities that as they travelled north were sometimes difficult to get. It was for an old gentleman a great adventure in which he showed great foresight and powers of organizing. Illness on the road was on the borderline of danger. Though he does not appear personally to have suffered—at any rate he does not record a personal illness,—from time to time his progress was delayed by illness among his bearers. He halted for some days at Mirzapur to allow his men, twenty of whom suffered from fever, to recover. There were no medical establishments or hospitals on the road ; consequently he took on men skilled in medicine and carried suitable drugs for 'indigestion, fever, boils and wounds.' 'For fever and ague', he says, 'I generally give cinnamon bark and after the fever is allayed, a purge'. In Bundelkhand, particularly, did his people suffer from fever. As he travelled, people of the country learnt that he carried remedies and came to him clamouring for help. But he decided that 'to practise the medical art blindly was a great crime' and decided never to give medicines except in cases of extremity. He records one death from cholera and one from fever. His arrangements therefore appear to have been efficient.

He seems to have recorded and posted to his friend through the company's post daily records of his progress. He names the stages travelled ; from what place to what place ; villages and towns passed on each stage ; the rivers to cross ; the nature of the road ; the supplies to be had ; the distances travelled ; the crops grown ; the industries, if noteworthy, practised ; the state of the country, under

what rulers ; and all such matters as would interest a future pilgrim to know. Thus he notes the difference in value of coins ; the currency in vogue—" north of the Kistna annas and half-annas are not current. His reckoning of distance is usually in '*cos*' ; and a *cos* he takes as equivalent to two miles, or, taking time as the measure, to two *ghadias* of twenty-four minutes each. Even when the local '*cos*', in which reckonings are made differs from the Madras *cos*, he gives his distances in the latter

Such parts of his record, though written in a simple pedestrian style, are full of interest. A sample may be given. " I rose at five on the morning of the 28th and travelled six miles to Naganapalli or Balanagara—the village has both names, which I reached at ten o'clock. The road was level, of cotton soil, mixed with sand and pebbles, excellent for carts to travel. The town is completely fortified........ I breakfasted here, started off at half past three, travelled six miles and at half past four reached a village which is composed of two villages, Janampet and Farakhnagaram, together making one long bazaar. It is a place full of Mahomedans. It has a chavadi for *Gosains* within a temple ; apart from which and some other chavadis there is no place in which to stay : in the houses there is no accommodation. I found great difficulty about water, the well being very deep and there being no good drinking water in the village ; I had to get it fetched from a distance. From Panagallu to Balanagaram the road is broad and straight : for some little distance before reaching the latter place it is rough and stony, but for the rest is very easy, running up and down between moderate jungles. Near Jonampet is a fort. This is the only place, since leaving Cuddapah, where green vegetables were to be had in the shops without effort. This journeying abroad may be conducive to health, but when a man comes to places where foodstuff is hard to come by, he has to pay highly for its rarity and living becomes very dear."

Dangers on the road were frequent. At the time the company's rule did not run over large tracts of country, and its influence towards good government and personal safety was not fully established. He records over and over again the presence of thieves, of *dagavallu* (armed bandits) ; murders on the road ; the fear of wild beasts. In consequence he travelled from the southern borders of Hyderabad almost up to Mirzapur with an armed guard. The first occasion of fear that he mentions was beyond Tirupati on the road from Karakarambadu to Shettigunta : 'at Mamandur and Krishnapuram are two poligars, without whose help no respectable traveller can pass the forest fearlessly.' A record written on the southern

bank of the Godavari in Hyderabad is of interest. "This side of Cuddapah bandits (dagavallu) now and again raid places where there are rich merchants and opulent men. They enter in a crowd at night with the greatest boldness, kill all who come in their way, break into rich men's houses and shops, stab the owners to death, carry off the property they find and in half a *ghadia* vanish completely. This sort of thing caused the intervention of English troops in Hyderabad. Throughout these parts these gangs are exceedingly feared. "The merits of the peaceable, with such evil men present, are of no avail; but it is the peaceable who give the Almighty delight." In Nagpur, at least in that part still under the Bhonsle rule, and away from the main roads where the company's mails travelled, conditions were much the same. In the Shimini taluq, under the Bengal Government, with agents at Jubbulpore and Sagar, having seven principal assistants under them, the widespread fear of robbers was reduced. "There are now stationed in every village three mounted police: many thieves have been taken and punished, and some hanged and left dangling by the roadside until the gallows fell to pieces." And now the only danger to the solitary traveller is the danger of wild animals." At Managam, nearing Mirzapur by the side of a hill-stream a 'man had been stabbed and left lying dead. The post peons who accompanied me, seeing this were much upset. "Since the company's orders have run in these parts", they said, "such murders have not happened on the main roads. What beginning is this?"

It was the age of Thugs, and not long after the Pindaris had been suppressed, and still the spirit of disorder was abroad. The only agency of good government throughout his journey, according to his account, was the Company, who everywhere introduced order and settled government. Again and again he comments on this: Most striking is his account of Hyderabad, where as he puts it, 'Mogul oppression' was rife. Of Secunderabad he writes: "The company's military station is becoming daily larger than Hyderabad. The increase since I saw it twenty years back is marvellous. There is no regular tax on goods entering the capital, but anyone may contrive to apply for a tax (i.e., to farm it) on some commodity or other and the Diwan farms it out to him. Thus firewood carts and leaf plates have four or five duties to pay before entering the capital, and the duty depends on the violence of the farmer. If you get killed, there is no chance of enquiry. In the English lines there are no such disorders: justice can be got through the Assistant of Commissariat in the Kotwal's court. Can it be wondered at therefore that merchants and others greatly desire to live in the Cantonment?" The Rajah of Nagpur accepted English control,

so that "there has been no necessity for people to cluster round their army (at Kamptee) seeking for protection." At Laluganj 'the company has, because of the gangs of dangerous robbers, called *daka*, built a *serai* or big chavadi for travellers to put up in, instead of in shops or other places. They have protected it with a boundary wall............and provided a guard of twenty-five police." He mentions the company's road from the top of Vindhya to the Ganges: "the company has made the descent very easy, having cut a road such that even carts can descend with facility." From Mirzapur onwards the company ruled, and he does not seem to have had any fear. He mentions the marking of a metalled road with milestones, as something novel and unusual; also the bridging of channels. Altogether he was, as a pilgrim, grateful for the company's control; and everywhere, if English officials were present, he got into touch with them, talked matters of religion, of administration and so on with them, records his talks. One thing that displeased him was the need to tip or bribe the belted gentleman, through whom only he could approach an English friend.

Scattered up and down his record are brief passages in which he shows appreciation of scenery. The most striking are expressions of wonder at bolder and wilder manifestations of nature; yet besides he frequently comments on the softer beauties. At Peddacheruvu near Srisilam, he notes, "The water of the tank is lovely with lotus blooms, and the water is such as I have not seen since I left Kotnur by Madras." Between Medicherala and Mashapet beyond Hyderabad, he writes, "The road on this day as on the day before, was charming: on both sides the forest was full of marking-nut trees, of mohwa and teak trees and the vermillion butea." Elsewhere; "it is a broad road and charming with the groves and paddy crops on either side." On the way to Hyderabad beyond the Kistna he observes with considerable emotion: Though Sheshachala Mountain is invisible when the Kistna is crossed, little mountain succeeds little mountain on the way. The Almighty, Creator of the Universe, seems to have fixed these hills, fitting stone to stone; here a boulder resting insecurely on another, as if it must roll off; there a slab, laid by a builder's trowel, exact and secure, lies upon another. As one looks on these multitudes of hills the fancy comes that the Blessed One made mountains of three-quarters of the earth. As to yourself for what reason in chief these mountains were created, and you will conclude that the earth's globe was but a water bubble, that to acquire stability needed the mountains to be created in multitudes; the Supreme God made them in sport. Look on 'the products of his might, these wondrous mountain piles,

these trees in their divers sorts that fill the boundless forests, and your senses are astounded." Wonder leads him to veneration.

I have endeavoured to give samples of this fascinating record. When it was first printed it evidently was much admired. Between its first and its second printing came the influence of Chinnayya Suri ; was the contempt of simple language, such as these letters are written in, which was cultivated as the result of that Pandit's example, the cause of the neglect of a work so realistic and natural as this ? Surely it is time that it were sought out and republished.

Maps of India—I

By

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The detailed geographical study of any region requires maps of the area on much larger scales than those of the wall-maps most commonly used. Maps of India on such large scales are published by the Survey of India for the whole country, and for the different provinces by the respective Revenue Survey departments. The Survey of India had its origin, towards the end of the 18th century, in the military topographic surveys undertaken at that time, and its maps are still chiefly designed and used for military purposes. The Revenue Survey maps are published primarily for the use of the Land Revenue department and for other administrative purposes. The more important " series " of maps covering large areas on uniform scales published by the Survey of India are on 1 inch= 1 mile and smaller scales, while maps similarly covering large areas on uniform scales published by the Revenue Surveys are on scales larger than 1″=1 mile, e.g., for the Madras Presidency, the town maps are on scales of 5″, 8″, 10″, and 16″,=1 mile, and the village maps on 8″ and 16″=1 mile.

The principal modern maps published by the Survey of India and the Central Survey Office at Madras, and their scales, are shown in the following table:—

Survey of India Maps.	Scales.	Madras Survey Maps.
General Maps of India.	1″ = 32 miles. and more.	Miscellaneous maps of the Madras Presidency on different scales, from 1″ = 12 miles to 1″ = 32 miles.
Southern Asia Series.	1″ = 32 miles.	
India and Adjacent countries.	1″ = 16 „	
Topographical Maps:		
" Degree " sheets.	1″ = 4 „	District Maps.
Half-Inch sheets.	1″ = 2 „	
One-Inch sheets.	1″ = 1 mile.	Taluk Maps & Outline sheets.
Town Guide Maps on scales of 1 : 20,000, 4″, 8″ and 12″ to 1 mile.	3″ and over = 1 „	
	5″ = 1 „	Town Maps.
	8″ = 1 „	Town and Village Maps.
	10″ = 1 „	Town Maps.
Cantonment maps on 16″ = 1 mile and 64″ = 1 mile.	16″ = 1 „	Town, Village, New Ward and Cantonment Maps.
	20″ = 1 „	Old Ward Maps.
	40″ = 1 „	Street Surveys.
	64″ = 1 „	

The Survey of India maps are mostly printed in several colours to distinguish different classes of geographical facts. Colour-printing has been adopted only recently for the Madras Survey maps, and a very large proportion of them is printed in black only. The colours used on the modern topographical maps of the Survey of India are :—

Brown, for contours, cliffs, broken ground, etc.

Grey, for hill-shading.

Blue, for perennial water in rivers, canals, tanks, wells, etc.

Yellow, for cultivation.

Green, for vegetation symbols and wooded areas.

Red, for roads and masonry structures.

Black, for railways, and all other detail, and for lettering and figuring.

The green and yellow tints are not used as stated above on the quarter-inch sheets.

It is important to realise the degree of accuracy attained on these maps. An accurately surveyed point will be correct on a 1-inch map up to within 50 yards. Old surveys and inaccurate surveying would be sources of errors. The seasons of survey, of first publication, and of reprints or new editions are shown by dates given in the marginal information printed on each sheet. On sheets of which only parts have been rigorously surveyed, the areas of doubtful accuracy are distinguished by being drawn in a special style; the streamlines and contours may be shown by broken lines. On more recent maps the relative accuracy is shown by a diagram or footnote. Displacement due to increase in the size of objects represented by conventional signs, and distortion due to shrinking or expansion of the paper subsequent to printing, would give rise to further errors.

The order of accuracy of detail shown on the maps is :—

(1) "Heights", which must have been fixed by triangulation, plane-table resection or intersection.

(2) Important intersections of "lines", e.g., road, railway, canal or river junctions.

(3) Important objects, e.g., bridges, railway stations, religious buildings, large wells, etc.

(4) Double-lined roads, railways, and canals.

(5) Detail only approximately surveyed by eye, e.g., corners of village-sites, cart tracks and footpaths ; corners of woods ; junctions of minor streams ; small knolls and boulder outcrops without a spot height, bends in streams, etc.

Heights vary in accuracy with the method of survey used to determine them. Bench marks (B. M.) are the most accurate, being correct to within one foot. Triangulated stations (△) are accurate to two feet, while triangulated points, with heights given in upright figures, are accurate to five feet. Plane-table points, with heights in sloping figures, may be considered accurate within ten feet ; the error may be much more in mountainous areas. The error of relative heights may amount to as much as 25 per cent.

The perennial water shown in blue on the maps is not absolutely reliable ; it shows conditions at the time of survey, generally, and the water-supply is bound to vary in different seasons, as well as from year to year. Rivers are liable to change their courses in level areas, after severe floods or by gradual erosion.

Roads, railways, canals and bridges are always liable to change from new construction and diversions. Village sites are also liable to shift, due to changes in river courses, or migration of the inhabitants ; and village-names are likely to change when they are taken from the name of the headman for the time being.

Administrative boundaries, roads, railways, canals, etc., are often shown on the Survey of India maps from extra-departmental information supplied by the different administrations.

Topographical features are shown in most detail on the Topographic maps of the Survey of India. The District and Taluk maps also show some topographic detail, which has been derived from the corresponding Survey of India sheets, and not independently surveyed. On the other hand, the taluk and village maps are specially valuable for detailed mapping and field work, as they show the village and field boundaries.

A. The main sources of information regarding the maps mentioned above are the map catalogues of the Survey of India and the Central Survey Office, Madras, and the Manual of Map Reading and Field Sketching, 1929.

B. Except for the village maps, which are obtainable only from the Tahsildar of the taluk to which the village belongs, all other maps published by the Central Survey Office, at Madras, are to be had for sale from their map-sales depot at Chepauk.

The Historical Geography of Indo-China

A Study in Hindu Colonisation

By

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The Indian colonists of the centuries before and after the Christian era who settled in various parts of Indo-China naturally established kingdoms and places named after those with which they were already familiar in their motherland. These colonies of Indo-China can be divided into six geographical regions, namely,

1. Burma or 'Ramañña-dēśa' of the Buddhistic traditions which, according to one version, was converted to Buddhism in very early times and according to another, in the 4th century A.D. by missionaries from Ceylon.

2. Cambodia or Kambōja or Kambuja dēśa, at present a French Protectorate of about 67,000 square miles with Siam on the north and west Annam on the east and Cochin-China in the south-east, and the Gulf of Siam in the south-west and west stretching for about 200 miles.

3. Siam or Śyāma-dēśa, the Sāmaraṭṭha of Buddhistic traditions, the Lāu of Siamese, and the Śyāmarāshtra of Sanskrit, called so in consequence of the black complexion of its Mon-Khmēr people who were superseded by the yellow-complexioned Tibeto-Burman Tāis. The word Śyāma was corrupted into Shān by the Burmese and Ziem by the Annamites, and indicates, in all these forms, the original Mon-Khmēr character of its ethnic stock. It was separated by the Salwīn from Burma, it had for its capital Lamphūn, which is believed to be a corruption of Hari-puṇya-pura. Siām was politically a part of Cambodia till the tenth century, but throughout this period it was subject to the same Indian cultural influences; and famous for its teak, rice and tin.

4. Yunnān or Yavana dēśa, covering the northern parts of the Peninsula on the Mekong basin, and forming at present a province of south-west China. More than 1,46,000 square miles in area, it is even now famous for its riches in gold, copper, zinc, tin, lead and jade. In the days when it was subject to Indian coloniza-

tion it had the town of Sudhāmanagari for its capital. It included the town of Luan Prabuang in Laōs which now forms part of the north-western region of French Indo-China immediately to the east of Burma and north of Siam on the bends of the Middle Mekong.

5. South Annam and Cochin China, known in those days as Champa-dēśa. The former of these is the southern half of the Province of Annam in the Central littoral of French Indo-China. Annam extends for about 750 miles along the China Sea and has a mean breadth of about 100 miles and an area of above 39,000 sq. miles. It has the divisions of Tonkin in the north; Laōs and Cambodia in the west, and Cochin China in the south. Its capital and seaport Hue and Tourane were Indian colonies; and its products include rice, cotton, silk, sugar, spices, timber, maize, coffee, bamboo and drugs. Copper, coal, iron, zinc and salt are mined. There is a native monarchy under French control established in 1884. The population of 5 millions consists of short, ungainly, small-nosed, round-headed people with dialects and scripts of early Chinese. Cochin China, bounded on the north by Cambodia and Annam, has about 25,000 sq. miles administered by a Governor and rich in rice, maize, yams, cotton, sugar-cane, rubber, coffee, spices, tobacco and fruit. Saigon is the capital and the people (4.4 millions) are mostly Buddhist Annamites. It will be shown that it was the earliest of the Indian colonies.

6. Malay Peninsula or Malaya-dēśa. The term *Malaya* is applied politically now-a-days to the southern portion of the Malay Peninsula consisting of the three distinct areas of the Straits Settlements, Federated Malay States and un-Federated Malay States, all of which are included in the British Empire. But in early times the area extended much farther north to the Isthmus of Krā, including some territory now owned by Siam. The land is now famous for rubber and rice, but in ancient days for the latter, besides gold and tortoise-shell.

The great feature in the history of Indo-China is that many peoples, regions and places have got Indian names. This is due to the fact that there was considerable migration from time to time and that the settlers reproduced in Indo-China the names with which they were familiar in their own land. Arakan, for example, has been traced to Arakhosia, with which were connected Badakshān and Bactria, transformed into Balaksha. The Parthians called this country *white* as it was derived from Balaksha. Upper Burma bordering upon Arakan was called Badakshān or Balaksha, and Arākān was derived from Arakṣha or Arakhosia, but modified by

the Dravidian pronunciation into Ārrankarai (with which Ptolemy's Argyre and Achin must also be connected). "As Upper Burma was named after Badakshān and Arakan after Arakhosia, the further south was called *Airrhādoi* from Ārya, Sandowe from Dranga, the territory about Cape Negrais and the upper portion of the Gulf of Martaban playing in Further Indian geography the role of Gedrosia and Sindh."[1] Similarly the names of the Indus Valley and its peoples, districts and cities were transferred to those of the Irāvati and surrounding country. The Chindwīn or the lower course of the Irāvati was called Sindhū. Its tributary was called Kubo after the Kubba. Kalē was the same as Pushkalāvati. The *Uru*, a tributary of the Chindwīn, further up, was named after the Harō, the left tributary of the Indus. The five rivers of the Punjāb were transferred to the five streams of Pegu, and the Gulf of Martaban was hence called Punzalaing or Panchalong or five rivers. The Sarasvati was transformed into the Salwīn; the Satlej into the *Chittagong*; and the Chināb into the China-bakeer branch of the Irāvati. Bhamo on the Irāvati in Upper Burma was the same as Champā with possible alternatives like Varmapura, Barmabar or Chamba.

There is similar 'toponymic mimicry' in the region which extends from the Gulf of Martaban to Laōs and the greater part of Northern Indo-China. Gerini in fact suggests that there was a second Mālvā in Western Laōs; a Daśārṇa in Eastern Laōs; a second Gandhāra in Yūnnan, besides a Mithilā or Vidēha; a Champā in Annam; and a Malaya in the Malay Peninsula. Generally, though not invariably, the northern parts of the Peninsula have North Indian names and the southern parts South Indian, thereby showing that, as a rule, the immigration into the two regions took place respectively from North and South India. This double stream of emigration began very early in history. "One, proceeding from the north, advanced overland through Maṇipūr and Burmā, and influenced the northern part of Indo-China as far as the Tonkin Gulf and the Chinese borders; the other coming from the south, reached Indo-China by sea, and its influence extended over the Malay Peninsula, Siām, Kamboja and Southern Annam." The early civilization of Northern Indo-China was therefore the work of North Indian settlers, and that of Southern Indo-China the work of 'adventurers and colonists from the Coromandel and Malabar coasts.'

1. See Gerini, pp. 40-2, footnote 3.

The evidences of North Indian colonisation are available in Upper Burmā, Siām, Laōs, Yūnnan, Tonkin, and in most parts of South-east Indo-China. From before B.C. 400 the ruling dynasties of these regions claimed to belong to the Kshatriya lines of the Gangetic basin. " From the Brahmaputra and Maṇipūr to the Tonkin Gulf we can trace a continuous string of petty states ruled by those scions of the Kshatriya race, using the Sanskrit or the Pāli languages in official documents and inscriptions, building temples and other monuments after the Indū style, and employing Brahman priests for the propitiatory ceremonies connected with the Court and State." Examples of such Hindu monarchies are " Tagōng, Upper Pugān, Prome, and Sēn-wī (Theinni) in Burmā ; of Mūang Hāng, Chīeng Rung, Mūang Khwān and Daśārṇa (Lūang Phraḥ Bāng) in the Lāu country ; and of Araganagara (Hanoi) and Champā in Tonkin and Annam."[2] On the other hand, the name Malaya was evidently given to the Peninsula by emigrants from Southern India. Gerini points out that the Negritos and the Mon-Khmer peoples who originally inhabited the country were subjected by Negrito-Dravidians and pre-Āryans from Southern India. He believes that the modern Malaya arose from the fusion of all these races with later comers from Indo-China and elsewhere. " I have not the slightest doubt," he says, " that the terms Malai or Malaya and Kola, Kala or Kolam have been imported to Further India by that stream of Southern Indian emigrants of dark or Negrito race, the descendants of the so-called Rākṣasas of old, and by their early successors the Dravidians, who constituted the pre-Āryan population of India, and who driven to the south of the peninsula and compelled to take refuge in the islands by the Āryans advancing from the north flowed on to the Malay Peninsula and Archipelago and to the coasts of Siām and Kambōja, where they founded colonies and spread in the course of time their religion and newly acquired civilization among the rude natives of the country, as well as among the intrusive races that had settled upon it." (p. 101). He sees in the Malayas of the Rāmāyaṇa and the Vijayas of the Mahābhārata the originals of the Malays of Malaya and the Gulf of Siam. He traces the Samangs north of the Perak river from the Samangas of the Mahābhārata ; and he believes that from the Karakas, Kukkuras and Kōharakas of the Epic the towns of Kara, Kora, Kokkonagara of Ptolemy arose. He regards the terms *Kola,* Kolam, Chōḷa, etc., as etymologically connected and to have been

2. Gerini, p. 122-3.

derived from the dark pre-Aryans of South India; that these still survive in the names like Chōḷa, Kollam, Kolamcha (Kalinga), etc. "In both Siām and Burmā the people from Southern India are up to this day called *Kula*. In Siamese the term *Kula* is more particularly applied to the natives of Malayavāra or Malabār. It would thus appear that, as far as Malabār and even the whole of the ancient Malaya region of Southern India are concerned, *Malaya* and *Kula* (or *Kola, Kolam, Kulam,* etc.) are synonymous ethnical terms. This explains how the Chinese came to apply the names of *Ku-lun* and *K'un-lun* (evidently derived from either *Kulam* or *Kolam* transferred from Southern India to the Malay Peninsula along with the designation *Malaya*) to the ancient population of the Malay Peninsula and Archipelago. That this population included a large proportion of Negrito-Dravidian elements would appear from a passage of I-tsing (A.D. 671-685), who, speaking of the people of the *Ku-lun*, or as he terms it *Chueh-lun* (i.e. *Colam*) country, says that its inhabitants are of a black complexion, with crisp hair. The close connection we have noticed between the terms *Malaya* and *Kola* as applied to the southern end of the Indian Peninsula (the ancient Malaya country) also explains the fact that we find them in that region coupled together in many a place-name, such as *Malai-Kūrram*, Kulam-malai, Kolla-malai, etc., already referred to above. In the same manner we find both those terms combined on the Malaya Peninsula where they were transplanted from Southern India in the name of the cape recorded by Ptolemy under the form of *Maleu-kolon,* which is evidently a transcription of the compound *Malai-kolam* or *Malai-kulam*. It will be noticed that this promontory occupies on the coast of the Malay Peninsula a similar position to that which the town of Malai-kūṟṟam holds on the coast of India. This circumstance would justify the assumption that near the cape now under discussion there may have been a settlement named after Malai-kūṟṟam on the Coromandel coast, and that the cape came in the course of time to be designated after such a settlement." (p. 104) "A similar name to that of the headland now under consideration is that of the town of Malacca, on the opposite coast, but further south. Though a possible derivation from *Amalaka,* the Sanskrit name for the *Emblic myrobolan,* has been suggested (why not from *Malaka* = the *Nimba* tree ?), I cannot credit it, and prefer to hold that the name of Malacca is either a modification of *Malayakolam* or *Malayaka* (meaning the 'country of the Malayas'); or that it is identical with *Malaka,* the name of a Southern Indian tribe mentioned in the *Mahābhārata,* transplanted, like many others, on the soil of the Malay Peninsula."

(pp. 104-5). The later Chinese writers use corrupt forms like *mutlai*, *muklai*, etc., to denote Malaya which they regarded as the southernmost kingdom of India. It was identical with Mo-lu-yo of I-tsing (A.D. 671). Inscriptions of still later times call it *Malayadīpa* and this name is "evidently connected with the alternative designations Śālmali and *Suvarṇa māli-dvīpa*; and probably was introduced from the Malaya district of the extreme south of India and Ceylon, the early dark race of which, the descendants of the rude *Rākṣasas*, and their successors the Dravidians, have undoubtedly been the pioneer colonizers not only of the peninsula, but also of the islands and entire sea-coast of Southern Indo-China." (p. 81). Gerini further points out that the Purāṇic Śālmali-dvīpa was the same as the Malay Peninsula. He identifies it moreover with the Lōhita Sea of the Rāmāyaṇa, which the later Arab geographers corrupted into *Shelaheth*, and which the Malays and Portuguese respectively changed into *Selat*, *Salet*, *Celates*, etc. "The *Śālmali*, justified to a certain extent by the abundance of the silk cotton trees (*Śālmali*, *Bombax Malabaricum*) in the low jungles of the coast, is more or less, as in the case of the other *dvīpas* of the Purāṇas, a conventional epithet. I believe it to be a corruption of *Suvarṇa-mālī*; for Siamese MSS., contain a legend of Buddha having left one of his holy footprints on the shining mount of *Suvarṇa-māli-giri* in the Tenasserim province, which I identify with the *Kūṭa-śālmali* peak on whose summit the Rāmāyaṇa places the abode of Vainatēya (Garuḍa)." The identity of Śālmali, Malaya-dvīpa, and Malay Peninsula is further dilated upon in an elaborate manner by Col. Gerini. Another noteworthy point is that, as will be shown presently, the Malay Peninsula has been identified with the Golden Khersonese of the classical writers, as distinguished from the Khrysē Khōra of the same authorities. The connection of the term *Khrysē* with Kuśadvīpa and allied questions, are dwelt upon below, as well as the other evidences bearing on the geographical data of the different parts of Indo-China and the Indian Archipelago.

It will be obvious from what has been stated above that the whole of the Indo-Chinese Peninsula and Malaya was subject to colonization from different parts of India. We do not possess the materials which enable us to trace the history of this colonization in its distinct stages. It must have been a process of many centuries, and it must have been promoted by powerful states in India. We have occasional glimpses of the naval power maintained by the Mauryas, the Āndhras, and the rulers of the Karnāṭaka and the Tamil countries; but the evidences are too few and far between,

and the general impression gained from the achievements of the Hindus in the Indo-Chinese Peninsula, Sumatra, and the Eastern Archipelago, is that the Indian colonisation and enterprise was not political, but purely mercantile. They do not seem to have been due to the ambitions of imperialistic dynasties, but the business capacities of its common (vaiśya) people, led of course by men who belonged to the Brahmanical as well as Kshatriya aristocracy. They were not colonies inspired by imperialistic ambitions, but by the enterprise of merchant-associations, though the latter owed their prosperity to the security which they had in the seas on account of the efficient government at home. The colonists, though they did not owe their greatness to royal patronage, still reproduced the Indian religion, society, arts, and general culture wherever they settled. Remnants of the Indian influences in religion, in social life, in arts, in city life and various other respects, are abundant, and have been described in great detail, especially by scholars of France and Holland, on the basis of archaeological, epigraphical and literary evidences, which have been gathered in plenty. A glorious chapter has been added to Indian history ; and a most distinguishing feature in it is that the lion's share of the glory seems to be due to the enterprise of the Dravidians in the main. It is true that North India had its own share, and the northern parts of the Indo-China were subject to the cultural drift and influences from Hindustan. But the major portion of Indo-China, the Malay Peninsula, and Malay Archipelago were colonised by the Dravidians from different parts of South India ; and we may remember how true these colonists were to the Hindu religious and political ideals as laid down by the Brahmanical law-givers and their Kshatriya supporters.

It is now recognized that there are several inconsistencies in Ptolemy's geography. He lengthens excessively the coast of Arakan and Pegu between Chittagong and cape regions as well as the Tonkinese coast with the result that some places (e.g. Hanoi or Aganagara)[3] are located much more south than their correct positions. On the other hand he lessened the extent of the western coast of the Malay Peninsula, representing it as much shorter than it actually is. Again, the coast of Tonkin and Northern Annam "has undergone at Ptolemy's hands the same lengthening at the expense of the southern as the corresponding coast on the eastern side of

3. *Gerini, p.* 11.

the Gulf of Bengal."[4] Within India itself Ptolemy had ascribed a much more northerly course than what it is, and so there is a displacement towards the north-east of all towns situated on its banks and in the neighbourhood.[5]

The first area referred to by Ptolemy in the region of Indo-China is the coast of Airrhadoi's, from the mouth of the Brahmaputra down to the Arakan River. The Airrhadois have been taken by some to be the Kirātas; but another view is that they were the Āndhras and Kaliṅgas who probably colonised this region, as well as the southward extension as far as the Gulf of Martaban. Megasthenese is said to have referred to the Āndhras and Kalingas on both sides of the Ganges and near the sea. The author of the Pentingerian Tables refers to the 'Andre-Inde' in the same region. Col. Gerini sees in the Śaivas and Aindras of the Mahābhārata who are mentioned next to the Tāmraliptakas and other nations of lower Bengal, some peoples of Indradvīpa and Plakshadvīpa (in E. Bharatavarsha and the area covered by Arakan and Burma) respectively. For these reasons he thinks that this region was colonised by the Dravidians of Orissa, Kalinga and Telingana as early as the 3rd century B.C., in consequence of which the country of the Mons or Talengs came to be known as Trikalinga (or Talaing) as in the Indian mainland.[6]

It may be pointed out here that Arakan, with which the Argyra of Ptolemy has been identified by Gerini, does not mean the silver country as Ptolemy says, or the country of the Rākshasas as Sir Arthur Phayre believed, but connected with Plaksha. Gerini disputes this and believes that the Rākshasa story is of Buddhistic origin and that, though the country was originally inhabited by savage Negrito or Rākshasa race like that of Ceylon, it was not exclusively a Rākshasic area as the latter extended right down to lands situated far south also, and would therefore trace the name Argyra to some original name meaning something like silver. " We shall meet with other instances of the same name or meaning at Achin in Sumatra, and at Perak in the Malay Peninsula. The original vocable is either *Perak, Prak, Praksa,* or *Plaksa,* meaning 'silver'. It will result from my examination of the geography of the Purāṇas in a subsequent section, that the coast of Arakan, with

4. Ibid., p. 14.
5. *Ibid.,* p. 20.
6. *Ibid.,* p. 30.

its *hinterland* as far as the Iravati or the Salwin, represents the region designated by the term *Plaksa-dvīpa,* apparently on account of a *plaksa* (Indian fig tree) growing there. I found out, however, that the term *Plaksa* really stands for the Sanskrit *Balaksa* and the Vedic *palaksa,* both meaning 'white', and I firmly believe, also 'silver'. It is my conviction, in fact, that the Malay *perak* and the Khmer *prak* used to designate silver are derived from them. In Mon (Taleng) there appears to have remained no trace of this name for silver; unless *son* (written *sran*), its present name, be a corruption of the terminal syllable of *plaksa. Bhau* or *bho* in Burmese still means 'pure silver'; and *bhyu* (written phru) means 'white' being probably equivalent to the Mon *phu.* From Barbosa it would appear that a portion of Upper Burma was, in his time, still called *Balassia,* from which the so-called 'balas rubies' were exported. In a Peguan (Taleng) work purporting to be an account of Buddha's pretended peregrinations in Indo-China, the kingdom of Burma is referred to as *Prasuluka nagara,* or *Pasuluka,* a term which seems to me a corrupted form of *Balaksa* or *Palaksa.* All these are coincidences demonstrating that the name by which the Purāṇas designate the region of Burma and Arakan has not been indiscriminately applied, but is simply an imitation of the early local name for the country. In languages which like the Arakanese, the Malay, and Khmer, delight in the *r* sound, and have a monosyllabic tendency, *palaksa* and *plaksa* become easily transformed into *paraksa* and *praksa, perak* and *prak.* From *paraksa* the corrupted forms *araksa, arakkha,* and even *rakkha* may be easily derived, which would explain the name of Arakan and the growth of the tradition as regards the raksas or rākṣasas originally infesting the country." (pp. 39-40).

After concluding that Barakura was the local name of Arakan in Ptolemy's time,[7] that Argyra was derived from it, and that both could be traced to the Purāṇic Plaksha and its variations, Palaksa, Balaksa, Rakkha, and Rakkham, Gerini discusses the topography of the various places named by Ptolemy in this region. Arakan was apparently an independent state in his time, no longer under the supremacy of Kalē. Its capital was Dhaññāvati, known to Ptolemy as Barakura, situated at the distance of about twenty miles off to the north-east of Mro-houng or Old Arakan city. Here we are told, a king named Chandrasūrya ascended the throne

7. The Kulādān has been identified with the Arakan river and the Tokosanna of Ptolemy.

in A.D. 146, and earned religious merit by casting a metal image of Buddha, and enshrined it in the Mahāmuni pagoda which he constructed on the Śilagiri (identified with modern Kyauktaw) in its vicinity. Dhaññāvati remained the capital till A.D. 788, and was then replaced by Vaisali, built near it. It has been suggested that the Borongo island at the mouth of the Kulādān, which forms a large harbour there, and Paloung, a village on the east bank of the same stream is the present town of Mro-houng, most probably preserve, each in a modified form, the ancient name of the kingdom, district, and seaport represented by Ptolemy's Barakura. Wilford identified[8] 'Palong' with Phalgun and Pharui gāra figuring in the *Kshētrasamaśa* ; and Gerini sees in the latter of these terms a close approach to Ptolemy's Barakura. He further points out that it was the *Po-hui-kia-lu* of the Chinese authors who describe it as a kingdom situated at a distance of eight marches from Burmah, and as a land to which silver was imported from the neighbouring Chindwīn valley.

The kingdom of Arakan had a number of prosperous urban marts. One of these was the Sambra of Ptolemy, which has been identified with the island of Rāmri, or an old city called Rāmavati in it. Another is Sada, which corresponded to Sandoway together with its river. It was a very ancient historical site where a number of celts and stone implements have been discovered. It was " as told in its old traditions, a foundation from India," and " its original name was probably Sanskrit. Its pretended founder, Sammuti Dēva, is fabled to have hailed from Benares: and the Nāṭs or spirits built for him, it is said, the city which was called Dvāravatī. Its present name, *Than dwai* (Sandwe), which is explained as 'iron-bound', rests on a legend to the effect that the city had the power of soaring above the earth, out of reach of danger, when attacked by enemies from outside on a particular occasion, and had to be bound to the earth with an iron chain before it could be conquered. If we read the name of the city as it is written, *Sadvai* or *Sāntvai*, and allow for the softening of the *r* into *y* usually occurring in Burmese, we may trace it back to some Sanskrit form like *Sadvāra*, equivalent, or nearly so, to the pretended ancient name Dvāravatī of the town. But I think that the latter and its district must be identified with the *Śāntabhaya* region mentioned in the Purāṇas as belonging to Plakṣa-dvīpa. The letters *b* and *bh* are, in Indo-Chinese languages, easily and frequently interchanged with *v* ; hence *Śāntabhaya*

8. Gerini's Ptolemy, p. 43 footnote.

can easily become *Śāntavaya,* which would then be written with the last syllable contracted, and read Sandwē." The early Portugese records call Sandoway by the names of Sadoa, Ledda, Ledoa, thus indicating its identity with Ptolemy's *Sada.* It seems to figure in the name of *Ezata* or *Zetta* in the legend of the foundation of the Shwe Dagon temple of Rangoon as a seaport between Pegu and Bengal. Sandwē has also been connected by tradition with Tripura and Dvāravatī by which latter name it was known in those days.[9] It was, according to Ptolemy, the terminus of the sea passage across the Gangetic Gulf or Bay of Bengal from Palura which has been located by some in the mouth of the Ganges and by others above Vizagapatam. It was, in other words, the first port touched by Indian ships on the coast of Burma after crossing the Bay of Bengal, though some vessels took a more northerly route and touched "at the riverine port of Antibole on the Dhakka or Old Ganges river, before making out for Sada and the Gulf of Martaban." Gerini traces the name Sados either to Sādāvari, a perennial river or to *Śāda,* a word meaning mud.

Another market in this part of the coast was Bērabonna. It sounds like Pāli Paripuṇṇa and the Sanskrit Pari pūrṇa ; and it has been identified either with the village called Pienne-goon-rwā on the Khwā River, or with the island-maket called Barrebam or Perrem above Cape Negrais.

Still another place of trade in this part of the country was Tēmala which Gerini identifies with Bassein, on the ground that the Diamond Island at the mouth of the Bassein outlet of the Irāvati is even now known by a name closely like that of Ptolemy's. The suggestion has been made that Tēmala might be named after Sīmylla or Chaul near Bassein in the Bombay coast, though not in a dogmatic manner. In any case the names Tamāla, Sāmala, Simiḥla are evident corruptions of some corresponding Indian names. The city of Tēmala, which perhaps means the Tamāla or dark town, has been very plausibly identified with Bassein by Gerini instead of the barren coast above Cape Negrais as was done by Yule and others. Bassein was called 'Kusi marāṭṭha' in Burmese records with 'Kusimanagara' for capital. This was apparently named after Pāṭāliputra. Kusima (that is, Kusuma) was corrupted into Cosmin, Casmin, Casmi, etc., by European writers. The names Passim and Bassim might have been also corruptions of this.

9. Gerini suggests that *Sandwē* might also have been named after Drangiana in the north-west.

That Bassein was a place of importance in early history is indicated by the traditions of Pegu (Taleng) which refer to it as one of 32 cities subject to the Mons or Talengs. Gerini believes that the place was the same as that mentioned in the Kishkindhākāṇda of the Rāmāyaṇa as Timira, after reference to Champa, the Lauhitya (Brahmaputra) ; the Kiratas (people of Tipperah and Silhet), (Ptolemy's Kirrhadia) ; and the lands rich with silver mines (argyra), and Mount Mandara (Maiandras Arakon Roma). "These two peculiarities help us admirably in fixing the position of Timira in the region between the Arakan and Pegu Romas ; that is, in the lower valley of the Irāvatī, celebrated both by eastern and western classics as the Golden Region, and known as the seat of a people, the Zabaings or Zamengs, noted for silk-worm breeding. And as the name *Timira* conveys the same meaning as Ptolemy's *Temala* or *Tamala* (*Tamāla*) there should be no doubt left as to both designations belonging to the one and the same city occupying a position close to, or on the very site of, the present Bassein, as set forth above."

(To be continued.)

News and Notes

It is our painful duty to record the demise of His Majesty George V, whose Silver Jubilee was recently celebrated with such great eclat all through the Empire. In memory of this great Emperor, the Working Council of the Association has resolved to put off the Decennial Celebration to next term.

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Three meetings of the Association were held during the third quarter of the year 1935-36. In the first of them *Mr. V. Venkataraman,* delivered on 6-11-35 a lecture on "*The Political Geography of the Italo-Abyssinian Conflict,*" under the presidency of *Mr. Joseph Franco.* In the second, Mr. *N. Subrahmanyam* spoke on "*The Tourist Industry in the West,*" with Miss *E. D. Birdseye* in the chair, on 14-12-35. In the third, Mr. *P. Sridhara Rao* read on 29-1-'36 a paper on "*The Geological Formations of South India*" with Mr. *T. N. Muthuswami* in the chair. All these three papers are published in this number.

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We have great pleasure in acknowledging with thanks the presentation to the Vizagapatam branch of the Association, of 50 books on Geography by Mr. Vepa Kamesam, B.A., L.T., the Headmaster of the C.B.M. School, Vizagapatam, on the eve of his retirement. This branch is proposing to arrange for a Geographical Exhibition shortly. The Coimbatore branch also is continuing to function actively.

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Mr. J. A. Yates, M.A., I.E.S. (Retired), has contributed a very interesting article (included in this issue) on the Records of a Pilgrimage undertaken by one Mr. Viraswamaiya from Madras to Benares about a hundred years ago. It gives us an insight into the life and conditions of the times in the different parts of the country along his route as well as the travel methods in those days of some of the well-to-do folk.

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The Questionnaire on the conditions of teaching Geography in the Secondary and Training Schools of the Presidency, prepared by the Standing Committee of the Association, has been sent to the heads of various schools, with the approval of the Director of Public Instruction; and replies are being received. The results of the investigation will be reported to the Director for necessary action, as required by him.

* * * * *

With the issue of the recent Scheme of Work and Syllabus for Forms 1 to 3 by the Educational Department, the middle school classes have a fair chance of having the methods of teaching of Geography improved soon enough. But Geography in the Elementary Schools is still running its merry course on old lines; and very little attempt has so far been made to pull up Geography teaching at this stage. The Standing Committee of the Association has consequently taken it up; and three meetings have so far been held to evolve a scheme that will be both satisfactory and workable. Some more sittings will be needed before such a thing can be completed.

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Arrangements are in progress for the *Sixth Geographical Conference* of the Association to be held at Salem in the second week of May 1936, along with the S.I.T.U. Conference. Mr. *B. Rama Rao*, M.A., D.I.C., F.G.S., Director of Geological Survey in Mysore, who was chosen by the Working Council to be the President of the Conference, has kindly consented to do so. Mr. *D. J. E. Collins*, B.A., L.T., Geography Assistant, London Mission High School, Salem, is the Convener and Secretary of the Local Committee that looks after the arrangements. In connection with the Conference, excursions will be arranged to visit the local Magnesite Works, Yercaud, Mettur and Pachaimalai Hills. It is hoped that members will attend the Conference in large numbers, and help to make it a success.

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A Summer School of Geography has been arranged to be held under the auspices of the Association at the Geography Department of the Teachers' College, Saidapet, for three weeks from 15th April 1936. In addition to the usual subjects and the connected practical work, special lectures will also be given on the new Scheme of Work and Syllabus for Forms I to III. Local excursions will also be conducted in connection with the classes for field study as in previous years.

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Uncertainty still hangs over the Secondary School-Leaving Certificate Scheme of the Madras Educational Department, and with it on the position of Geography in it. Everything depends on the lead that may be given by the new Director of Public Instruction, Mr. R. M. Statham, who is well-known to be a friend of Geography. We may, therefore, be sure that nothing will be

done to affect adversely the present position of the subject in the scheme.

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We understand that Sarah Tucker's College, Palamcottah is likely to have Geography started in the Intermediate Course next year. That will be a second women's college going in for the subject at that stage. We wonder when any men's college in the presidency will begin to think of having Intermediate Geography. B.A. Geography is, of course, Branch VII in the University Calendar only (Greek Calends !).

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We are glad to note, however, that the University Diploma Course in Geography is being more and more appreciated, especially in view of the policy of the Principals of Training Colleges giving preference in the matter of admission to the Geography Section of the L.T. Class to candidates with the Diploma. A rush for admissions to that course next year, is, consequently, anticipated. The new building on the Marina Road for housing the University Geography Department is nearing completion; and classes will be held there from next term.

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Reviews

Gateways of the World. By C. B. Gyford. (W. & A. K. Johnston, Ltd.), 1936. Price 2sh.

This is an interesting geographical reading-book, written on refreshingly new lines for children in the early middle school stage. The author, who is apparently a widely-travelled person, attempts to interest the children by his first-hand knowledge of peoples, places and facts, grouping the facts round the great ports along the world routes. In fact, the subtitle of the book, "An Eye-Witness Geography of Travel," is at once suggestive of both the scope and the method of treatment. While the younger children may use the book purely as a reader, it can serve as a geography text-book for the advanced pupils, though a little away from orthodox lines. The numerous exercises might be used to supply the skeleton geographical knowledge of the chief regions of the world as also to carry out a little research work. The pictorial illustrations and maps enhance the value of this little book, whose type and get-up are quite attractive too.

A Geography of the British Empire. By W. L. Bunting and H. L. Collen. (Cambridge University Press). 1935. Price 6sh.

This is the fourth edition of a book first published in 1913 in accordance with the lines laid down in the Syllabus adopted by the Headmasters' Conference of 1910 in England. Hence, the book is pre-War in outlook though the facts are all quite up-to-date.

After a very brief introduction, dealing with a few of the essential principles of general geography, the different units of the Empire are dealt with systematically with an eye to Examinations, laying emphasis at the same time upon important geographical principles. Plenty of scope is given for individual map-work to be done with the help of the Atlas. The concluding chapters on British Outposts, Frontiers in General, the Boundaries of the Empire and Aviation round off the book, making it especially useful for Army candidates. The book is well illustrated with a number of pictures, maps and diagrams.

World-Wide Geography Practical Note-Books. (Books 1 to 4). By J. H. Stembridge and S. E. Williams. (Oxford University Press). Price 9d. each.

These Note-books have been prepared for use by pupils of Senior Schools in England ; and they can be used with great advantage in Indian Secondary Schools, where English is the medium of instruction. The exercises which have been carefully prepared cover all aspects of regional work as well as important local observational work. They are designed to make the pupils conversant with the geographic skills and conventions. A volume on India in place of the British Isles is a desideratum for Indian schools.

The Oxford Indian School Atlas. By John Bartholomew. (Oxford University Press). 1935. Price Re.1-4.

This is the eighth edition of a cheap and useful school atlas, specially prepared for Indian schools, whose earlier edition was reviewed in a back number of the Journal. Besides the several special and sectional maps of India in the original edition, a number of improvements have been made in this. For example, the population statistics (Indian, Imperial and World) have been brought up-to-date, and maps of World Distributions, a map of Air-routes and sea-routes and English and Indian Historical Maps have been newly included. The introductory diagrams and explanatory notes on principles of mathematical and physical geography and a full index render this atlas highly useful for Indian secondary school pupils.

The Regions of the World in Pictures. (Sets I and II). Northern Africa and West & Central Africa. Selected and edited with descriptive notes by G. J. Cons. (University of London Press). Price per set (of 16 pictures each) 1sh. 3d. each.

The teaching of Geography is often merely bookish in this country due to the neglect of practical and realistic methods of handling the subject. Some improvements have, however, been made in recent years by practical and field work being introduced at least in some of the better schools. But little has been done to make the study realistic by the use of pictures. We would therefore strongly recommend the use of these pictures, which have been carefully selected for their geographical value.

The marginal notes are valuable to the pupil in drawing his attention to the geographical points in the pictures, and to the teacher in suggesting the method of using the pictures. Picture-reading is as important as map-reading in the study of Geography.

Wall-Map of the World (in Tamil) : Physical, Political and Communications. (Longmans, Green & Co.), Price Rs. 4.

We congratulate the publishers on producing a Tamil Wall-Map of the World, which satisfies a long-felt need. The map itself is fairly large in size (43 inches by 34 inches); and the general relief features have been brought out admirably. The lettering is bold, clear and well graduated in size according to the importance of the names, without at the same over-crowding them. The important trans-continental railways and the chief sea-routes have been marked with the distances of the latter, though the chief air-routes have been omitted. The political boundaries, however, are not sufficiently clear and bold; and we would suggest this being rectified in the next edition. We hope that the managements of elementary and secondary schools in the Tamil Nadu will appreciate the service rendered by the production of this map and purchase them for their institutions

Books and Journals Received

A Geography of the British Empire: By W. L. Bunting and H. L. Collen.

The Clarendon High School Geography: By Herbert Pickles.

World-Wide Geography Practical Note-Books (Books 1 to 4) : By Jasper H. Stembridge and S. Ewart Williams.

Oxford Indian School Atlas: By John Bartholomew.

Gateways of the World: By C. B. Gyford.

The Regions of the World in Pictures: (Sets I and II) : By G. J. Cons.

Map of the World, (Physical and Communications) in Tamil.

Report on the Operations of the Department of Agriculture, Madras: 1934-35.

Report of the Department of Industries, Madras.

The Educational Review: November and December 1935, and January 1936.

Indian Journal of Economics: October 1935.

Kalaimagal: November and December 1935, and January 1936.

The Muslim University Journal: June 1935.

The Geographical Journal: November and December 1935, and January 1936.

Educational India: November and December, 1935, and January, 1936.

The Indian Educator: November and December 1935, and January 1936.

Journal of Indian History: August 1935.

The South Indian Teacher: November and December 1935, and January 1936.

The Scottish Geographical Magazine: November 1935, January 1936 and Index 1935.

The Indian Co-operative Review: October 1935 and January 1936.

Geography: December 1935.

Quarterly Journal of the Mythic Society: July-October 1935.

The Geographical Magazine: January 1936.

Indian Culture: January 1936.

Geographical Review: January 1936, and Index for 1935.

Sahakari Madhyabharata: January 1936.

ROAD-TRAVEL BY FIRST CLASS BUSES.

STANDARD CONDUCTED TOURS

A. ONE DAY. (1) Places in the City of Madras; (2) Red Hills Tank; (3) Ennore Backwaters and Salt Factory; (4) Sembarambakkam Tank; (5) Vandalur Reserve Forests and Hill; (6) Seven Pagodas (Ancient Sculptures and Caves) and Tirukkalukunram (Temple on Hill); (7) Covelong Salt Factory; (8) Conjeevaram (Vishnu and Siva Temples).

B. TWO DAYS. (1) Pondicherry (French Territory); (2) Gingee (Fortresses on Hill); (3) Vellore (Fort) and Ranipet (Parry's Distillery); (4) Tiruttani (Hindu Hill-Temple).

C. THREE DAYS. (1) Vellore Fort, Krishnagiri Hill-Fort, Toppur Ghat, Mettur Dam, Salem Town, Attur Valley; Villupuram; (2) Tiruttani Temple and Nagari Hills; (3) Villupuram—Vriddachalam—Chidambaram Hindu Temple.

D. SIX DAYS. (1) Chittore—Palmaner Ghat—Kolar Town—Bangalore City and Cantonment—Chennapatna Silk-Rearing Farm—Sivasamudram Waterfalls—and—Power-Generation Station—Seringapatam (Tippu's Capital, with the ruins), Mysore City and Chamundi Hill—Krishnasagara Dam and Brindavan Gardens; (2) C-1, with Coimbatore—Coonoor—Nilgiris and Paikara Falls and Power Works; (3) Chittoor—Madanapalle—Anantapur—Bellary and Humpi (Vijayanagar Ruins).

E. FOUR DAYS. (1) C-1, with Yercaud Hill; (2) C-1, with Chidambaram.

F. NINE DAYS. (1) D-1, with D-2.

G. TEN DAYS. (1) D-1, with Belur, Halabid (Hoysala Architectures); Shimoga Coffee Estates and Gersoppa Falls; (2) D-1, with Bellary and Humpi.

H. TWELVE DAYS. (1) G-1, with D-3.

In all these cases, an all-in cost will be made, including transport, boarding and lodging.

Enquiries about these and other Road-travel matters generally are always welcome without any obligation, no matter how small or large the party is, or how long the tour is to last.

V. S. MAHADEVAIYAR,

Transport Agent, Nungambakam, Madras.